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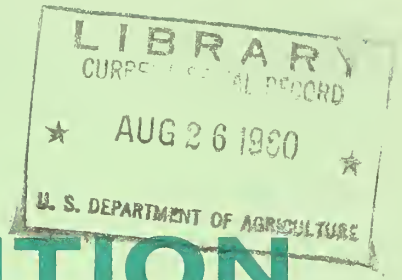
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PRICING AND COMPETITION ON BEEF IN LOS ANGELES



U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
MARKETING ECONOMICS RESEARCH DIVISION
WASHINGTON, D. C.

PREFACE

Broad forces are at work in the economy that are shaping and reshaping the organizational structure of the marketing system for agricultural products. Among these are population growth, the suburban movement, rising real per capita incomes, changes in age and income distributions, adjustments in consumer preferences, changes in shopping habits of consumers, and a wide variety of technological innovations in production and marketing.

A revolution in the retailing segment of the food industry was one of the first and most significant of the structural changes caused by these forces. Supermarkets and large-volume local, regional, and national retail grocery chains developed. Some of the chains integrated vertically by buying or merging with their suppliers, and most adopted new or changed marketing practices that are altering traditional patterns of production and marketing. Large-scale production and direct marketing in volume of highly standardized farm food products, for instance, has become the rule rather than the exception.

There is considerable interest among farm and food marketing groups in the structural changes that have taken place and in their probable impacts and implications. Economic effects of more direct marketing and procurement practices of large-scale retailers are of particular concern. Several studies are underway in Government agencies and State colleges and universities which deal in a broad, aggregative way with the changes that have taken place in marketing. Some are primarily concerned with retailing and with the effects on producers and others of changes in retailers' procurement practices.

As a part of that broad program of research, a detailed study was made in which marketing conditions for one commodity, beef, were examined intensively at one market. This is a report of that study. Los Angeles was used as an experimental laboratory and, accordingly, some of the findings have wider application. The study covered, among other things, the structure of prices in the market for beef; price relationships among the retail chains, the various types of buyers and sellers, and grades and weights of beef sold; gross margins of packers and retail chains; relationships between variations in quantities of beef purchased by the chains and variations in local slaughter, prices paid, and the incidence of price specializing by the chains; buying and selling practices of packers and retailers; and the nature and effects of competition in the market. Particular marketing problems were delineated and analyzed as to source, relation to other problems, and possible solutions.

Willing cooperation of many individuals and firms in the Los Angeles area and of many others is gratefully acknowledged by the authors.

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SUMMARY

Principal problems in marketing beef in the Los Angeles market have resulted from (1) vast changes in the organization and structure of the market, (2) the shift of southern California from a deficit fed beef supply area to one occasionally burdened with surpluses, (3) the uneven flow of slaughter cattle and beef carcasses through marketing channels, (4) additional factors contributing to uncertainty in the market, and (5) the difficulty packers and some other suppliers have in adjusting to dynamic changes.

Changes in the structure of the Los Angeles market can be traced most easily to changes at the retail level. But a host of more basic factors led to the supermarket movement and to the horizontal integration of retail grocery firms into corporate chains. These and other factors led to the development of a commercial cattle-feeding industry in the Southwest and West. With large changes taking place at both ends of the marketing system, adjustments in the middle were inevitable. Independent packers became more specialized and national packers declined in relative importance; the packer branch houses shifted more to pork, and new or specialized types of distributors, such as the beef breakers, appeared.

The structural evolution introduced changes in competitive relationships among firms in the market. The competitive strength of large-volume retailers increased relatively, while packers and other suppliers of beef found themselves faced with new competitive disadvantages. Competitive advantages of the retailers derive mainly from (1) the volume of beef purchased on a detailed specification basis, (2) ability of the retailers at any time to shift their purchases to other markets, (3) capital resources with which to purchase their own cattle feeding, slaughtering, processing, and distributing services, (4) more or less uniform response by the chains to changes in market supply and price conditions, (5) indications that the larger retailers usually either possess more knowledge of economic significance than packers or are in a superior position to use this knowledge. There was some evidence of price leadership in buying among the chains, but the lower prices paid by one of the larger chains appeared to be explained on the basis of the type of beef purchased and differences in services required.

The chains tend to buy heavily from only a few specialized beef slaughterers. This, along with other factors, tends to result in a large number of financially and competitively weak sellers among the packers and other suppliers. The competitively stronger specialized packers are more affected than others by variations in marketings and in retail purchases, and by other sources of uncertainty. Whether reference is made to "weak" sellers or "strong" buyers, the result is the same. Additional adjustments by packers to changes at other levels of the marketing system probably will be required.

Numerous sources of inefficiency in the pricing and distribution of beef were apparent. Among these were:

1. Competition among retailers on a price basis was less intense than seemed desirable for maximum efficiency in marketing, because sales prices and gross margins of Los Angeles retail chains on beef were relatively high.

2. Competition for bargaining power between the retailers and the packers appeared intense, but in a long-term sense marketing costs on beef probably could be more nearly minimized if the packers and the larger retailers were more nearly equal in bargaining power and competitive strength. Also, competitive pressure by the retailers sometimes results in transmission of erroneous price signals to producers and others.
3. A number of factors contribute to an uneven flow of fed cattle and carcass beef through marketing channels. Among these are (a) cyclical and seasonal changes in available supplies of high-quality slaughter cattle and in marketings from feedlots, (b) large shifts from year to year in the seasonal pattern of marketings from feedlots, and (c) wide variations from week to week in the volume of beef purchased from packers by the retail food chains. Variations in volumes of beef purchased by the chains from packers can and do sometimes temporarily affect wholesale carcass prices and returns received by producers, both upward and downward. These variations were found to be significantly associated with smaller variations in the local volume of slaughter and with the incidence of retail "price specials" on beef (special sales at low prices).
4. Considerable uncertainty at all levels of the market, lack of appropriate cost accounts at the packer level, and lack of marketing information on supplies, prices, and supply requirements result in inefficient pricing and poor dissemination of information vital to cost-reducing decisions. In addition, these factors prevent producers and marketing firms at the various levels of the marketing system from coordinating their efforts through the normal operation of the competitive system.

Findings indicated that wholesale market news price quotations, although accurate, must be used with caution in analyzing the effects of grading. A number of factors, including buying practices of retailers, tend to reduce the range of wholesale price variation within each grade and, therefore, price differences at wholesale between grades exceed the within-grade price differences to a significant degree. Nevertheless, the research findings show that packers receive higher prices for higher quality within each of the grades. Within the Choice grade, price premiums for quality were small and usually were obscured by discounts for weight, because heavy carcasses usually are higher in quality but the discounts exceed the premiums. Similarly, discounts for low quality within the Choice grade are obscured by premiums for light weight. The lighter carcasses are less wasteful and yield a higher percentage of edible meat. Within the Good grade, the quality factor was by far the most important. Retailers paid as much as \$1 more per hundredweight for higher quality carcasses than for lower quality in the Good grade, but they were unwilling to pay as much as 50 cents more for lightweight carcasses than for those that were exceptionally heavy. The analysis indicates that carcass weight may be emphasized in the wholesale market news report on beef more than is justified.

PRICING AND COMPETITION ON BEEF IN LOS ANGELES

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INTRODUCTION

Distribution of beef involves a highly organized network of slaughterers, wholesale distributors, and retailers; a variety of marketing practices; competition in various forms; and a complex structure of prices. Dramatic changes, however, have taken place in the beef industry during the last 20 years and additional changes are in prospect. Old methods and means of doing business are giving way to new. Competitive positions of packing, wholesaling, and retailing firms in the industry are shifting, and this, together with changes in population, income, and technology, is revolutionizing the industry. In response to a new set of economic forces, the agencies engaged in beef marketing are changing, new marketing practices are developing, distribution channels are shifting, and an altered structure of prices has appeared. 1/

This process of dynamic change and adjustment is especially evident in Los Angeles. Here, beef production and distribution are being influenced by an unusually rapid growth in population, changed income and consumption habits, the rapid development of a large number of retail food chains and independent supermarkets, the establishment of a commercialized cattle feeding industry, introduction and widespread use of Federal carcass grades, and transition of the California-Arizona beef industry from a deficit supply area to one with occasional surpluses.

These developments have led to concern regarding their economic effects on producers, consumers, and various elements of the beef trade. Questions raised usually involve the retail food chains, the Federal grades for beef, effects of the shift in supply-consumption balances, or specific marketing practices. Most of the concern, however, derives from one of two sources: (1) Change requires adjustments which may be painful or difficult for some segments or firms in the market; and (2) the process of change may be handicapped by lack of knowledge or understanding of the forces generating change, the changes themselves, or their effects.

Objectives of the Study

The basic aim of this study, then, is to determine the nature and source of such problems and maladjustments as may exist in the Los Angeles market for beef, as a basis for improvements. To achieve this goal and acquire a more

1/ See: Williams, Willard F., Structural Changes in the Meat Wholesaling Industry, Journal of Farm Economics, Vol. XL, No. 2, May 1958, pp. 315-29; also Williams, Willard F., Bowen, Earl K., and Genovese, Frank C., Economic Effects of U. S. Grades for Beef, Mktg. Res. Rpt. 298, U. S. Dept. Agr., Agr. Mktg. Serv., Jan. 1959.

complete understanding of the beef pricing structure and distribution system in Los Angeles, it was necessary to analyze each major segment of the market, to investigate interrelationships among economic factors within each segment, and to determine interactions among the segments. The study was designed to:

1. Determine the organizational structure of the market, which involves the delineation of distribution channels and marketing agencies, their characteristics and relative importance. 2/
2. Describe the pricing, procurement, and distribution policies and practices of packers, wholesale distributors, retail food chains, and others in the market, with emphasis on procurement practices of the retail food chains.
3. Determine differences and analyze interrelationships (a) at the wholesale level among prices paid by the various types of buyers for the different grades and for different weights or qualities within each grade, measuring the relative importance of the influence these factors exert on wholesale prices, and (b) among prices paid by retail food chains and among variations in volume of beef purchased by chains, retail sales prices, retail margins, wholesale market news prices, market news prices for live animals, and packers' slaughter margins.
4. Develop suggestions for (a) promoting an improved understanding and interpretation of live and wholesale market news prices, and (b) broadening the coverage and improving the usefulness of market news prices and additional types of market information that would improve efficiency in beef marketing.
5. Analyze competitive interrelationships.

Research Data and Procedure

Data for this study were collected mainly in the Los Angeles metropolitan area, comprising Los Angeles County and surrounding metropolitan areas. Data on distribution channels, however, were obtained from nearly all packers in southern California and from a few packers in the San Joaquin Valley who regularly shipped beef into Los Angeles.

Major sources of data employed were: (1) A general survey conducted during the summer of 1957 of packers in southern California and of all types of wholesale meat distributors and retail food chains in the Los Angeles metropolitan area, (2) a 37-week survey beginning in February 1957, in which daily prices paid for beef and numbers of carcasses purchased by the 10 largest retail food chains in the area were obtained, and (3) two detailed sample surveys and inventories of packers' coolers, one in the spring and another in the fall of 1957.

2/ Findings in this part of the study were presented by Raymond A. Dietrich and Willard F. Williams in Meat Distribution in the Los Angeles Area, Mktg. Res. Rpt. 347, Agri. Mktg. Serv., U. S. Dept. Agr., a companion report to this one.

The general survey was made to determine the structure of wholesale markets for beef, veal, lamb, and pork in Los Angeles. In this survey, all packers' branch houses, about half of the jobbers and wholesalers, 10 percent of the truck distributors, and nearly all of the 37 retail food chains operating in the area, in addition to packers, were interviewed. Total annual volumes, sources of supply, sales by type of buyer, type of grading, and grades on each species of meat handled were obtained. Details of the research findings based on these data are contained in the companion report mentioned previously, but, where appropriate, the data on beef also were used in this study. 3/

The meat buyers of the 10 retail food chains with the largest volume of sales in the Los Angeles area were contacted once or twice weekly beginning with the week of February 18, 1957, and ending with the week of October 28, 1957. The following data on beef were collected from each chain: (1) Specifications, buying procedures, and procurement pricing practices, (2) daily prices paid for carcasses by grade, weight range, and type of supplier, and (3) number of carcasses purchased by grade, weight range, and type of supplier. Some data on these chains were obtained also in the survey of packers' coolers. In addition, the Department had been collecting retail sales price information by individual retail cuts from three of these chains on a weekly basis since 1955. These data for the period 1956-58 were utilized.

Data are presented in this report on the 10 largest chains as a group and on the following subgroups: Group 1, the six largest; Group 1A, Group 1 excluding chain A, which differed distinctly from the others in size and method of operation; and Group 2, the four smallest chains among the 10 largest. In addition, some information is presented on individual chains, chain A particularly.

In the survey of packers' coolers, made during a 3-week period in the latter half of March 1957 and a 2½-week period in the first half of November 1957, detailed information was obtained on about 3,000 carcasses. With the help of a Federal meat grading supervisor, data were recorded during each period on nearly all carcasses in the coolers of each of about a dozen packers. The following information was obtained: (1) Weight, grade, and one-third-grade classification (top third, middle third, or low third) of each carcass, (2) date of purchase, slaughter date, sale date, and type of buyer, (3) prices paid, by type of buyer, and (4) other information, such as extent of bruising or discoloration.

Adequacy of the Data

Most of the data obtained are considered sufficiently reliable for purposes of this study, though the general survey information was based largely on informed estimates. Data collecting procedures and the survey design, incorporating three separate approaches, provided cross-checks.

Ten major retail food chains contributed daily information for this study. These data did not include daily prices and quantities of wholesale beef purchased in other than carcass form. Data on total annual volume obtained in the general survey, however, included all beef purchased by chains.

3/ See footnote 2.

The data obtained in packers' coolers in the spring and fall of 1957 on individual carcasses are considered generally reliable and accurate. However, several sources of uncontrollable variability, such as human error in grading and determination of sales dates, are known to exist. This is especially evident when classifying carcasses into one-third grades. 4/ In many instances, it was necessary to classify carcasses into one-third grades before they were "ribbed." (Ribbing is the practice of cutting one side of the carcass between the 12th and 13th, or last, ribs to expose a cross-section of the loin.) Not all carcasses are ribbed, but the process helps the grader classify so-called "liner" carcasses, as it permits him to take account of color of the lean and degree of marbling. 5/ About half the carcasses used in the study were grade classified before they were officially graded and "rolled." 6/ This provided opportunities to check the full grade designation made for the study against the official grader's determination, and full use was made of these opportunities. In addition, several "lots" or "lines" of carcasses were classified twice by the grader employed. Tabulations show that classifications on the same carcass seldom differed by two-thirds of a grade. Differences of one-third grade were remarkably few. The same grader was used in both the spring and fall trials to assure greater consistency in the data than if different graders had been used.

Changes in the level of prices, particularly during the spring period, were carefully considered in the analysis and, to the extent possible in statistical procedures, were isolated or eliminated.

Trade organization membership was used as the criterion for classifying jobbers, wholesalers, and truck distributors. All buyers listed as members of Meat Jobbers, Inc., were considered jobbers. These were the meat distributors engaged primarily in servicing hotels, restaurants, and other dining establishments. Distributors who were registered with a particular local truckers' union or who were members of Meat Distributors, Inc., were classified as truck distributors. Wholesalers, who were relatively well-known, are large-volume distributors handling beef almost exclusively and engaged primarily in breaking carcasses into smaller wholesale portions. 7/ Retail chain organizations were defined as companies operating five or more retail grocery stores.

Packers' branch houses, or packinghouse branches, are nonslaughtering meat distributors and processors owned by national packers who, in turn, are packers with national systems of meat distribution. Transfers of beef by national packers to their branch houses were excluded from the data obtained in packers' coolers because of the difficulty in establishing "sales prices." Other buyers

4/ The one-third grade classes are unofficial. Only the full grade designations are placed officially on beef carcasses. Still, clear-cut distinctions are made by the Federal graders in their training programs and these distinctions frequently are referred to by the graders in classifying carcasses and by buyers and sellers in bargaining.

5/ A "liner" is a carcass the physical attributes of which place it near the line of demarcation between two adjacent grades.

6/ "Rolling" is the practice of permanently placing a grade designation on a carcass using inked stamps mounted on a small wheel.

7/ In this report "wholesalers" refers exclusively to beef wholesalers or "breakers." The term "wholesale distributors," however, is used to include wholesalers, jobbers, truck distributors, and packers' branch houses. The term "independent wholesale distributor" excludes packers' branch houses.

were classified as independent retailers. All classifications were reviewed by persons well acquainted with the local meat trade.

SUPPLY, STRUCTURAL, AND DEMAND CHARACTERISTICS OF THE MARKET

Many of the supply-demand characteristics of southern California with respect to beef and other meats are peculiar to that area. ^{8/} It is an area rather far removed from the principal feed and livestock producing region of the United States, the Corn Belt, and is at the end of the supply line that extends westward for many meat products from midwestern packing plants. Los Angeles is the largest consumption center west of Chicago. Because the city is in a semi-desert area of mild temperatures and traditionally short livestock feed supplies, distinctive patterns of livestock production have developed and consumption, to some extent, has adjusted itself to these conditions. Per capita consumption of pork, for instance, is exceptionally low in Los Angeles, partly because relatively few hogs are produced in the West. Consumption per person of beef and lamb, however, are high--apparently as high or higher than in any other market in the United States.

Supply-demand relationships for different types of beef differ sharply in southern California. Rapid population growth, increasing per capita incomes, and high per capita consumption of beef have made the area increasingly dependent upon other States for feeder cattle. ^{9/} In contrast, southern California is becoming less dependent on other areas for supplies of slaughter cattle. Rapidly increasing beef consumption in the area has been more than matched by growth in the commercial feeding of cattle. It is a deficit supply area, and to an increasing extent a national market, for feeder cattle, since numbers produced on farms and ranches in southern California are a declining percentage of the supply required for feedlot finishing. In 1958, Texas, followed by Arizona, was California's most important source of feeder cattle in shipments, but relatively large numbers also were received from Nevada, New Mexico, Oklahoma, Kansas, and States farther east. Cattle producers in other States, therefore, are becoming increasingly interested in the growth potential of southern California and in the Los Angeles market.

In contrast, southern California is becoming less dependent on other areas for supplies of cattle ready for slaughter. Rapidly increasing beef consumption in the area has been more than matched by growth in the commercial feeding of cattle. In the 1930's, there were few commercial cattle feedlots anywhere in the West, but by 1956 there were 162 such feedlots in California alone, most of them in southern California. ^{10/} In the face of a sharply increased volume of cattle slaughter in southern California, in shipments of cattle for immediate slaughter have remained about constant since World War II. With increased feedlot production of cattle in Arizona and other southwestern States, for which southern California is the principal market outlet, Los Angeles and other consumption centers in southern California are adequately supplied with high-quality fed beef.

^{8/} The term "beef" in this report includes, as is customary, all grades and classes of mature bovine animals.

^{9/} Seltzer, R. E. The Los Angeles Market for Western Cattle, Tech. Bul. 137, Ariz. Agr. Expt. Sta., April 1959, pp. 1, 19-38.

^{10/} From a survey of California feedlots conducted by the Western Livestock Journal in April 1957.

Markets in southern California, as revealed by price relationships with other principal market areas, sometimes are more than adequately supplied with fed beef. The shift in the Los Angeles market, from a condition of scarcity of high-quality fed beef to one of large and seasonally burdensome supplies, is a principal source of economic problems for marketing firms in that area.

Supply Characteristics

Production by southern California packers represents about two-thirds of the cattle slaughtered annually in the State, and more than half the State total is accounted for by packers in Los Angeles. In 1956, Los Angeles packers provided more than 90 percent of the total Los Angeles dressed beef supply. Cattle slaughter in southern California trended steadily upward from 1950 through 1956 in accordance with the national trend in cattle marketings (fig. 1). Sharp reductions in 1957 and 1958 resulted from reduced marketings as producers began to increase their herds.

Types of Beef Available

Types of cattle slaughtered in southern California include the highly finished beef animals from feedlots, "grass cattle" direct from farms and ranches, range cows and bulls discarded from beef cattle breeding herds, and salvage dairy cows and bulls. Before World War II, grass cattle constituted the bulk of the supply for the fresh beef market. These animals were finished

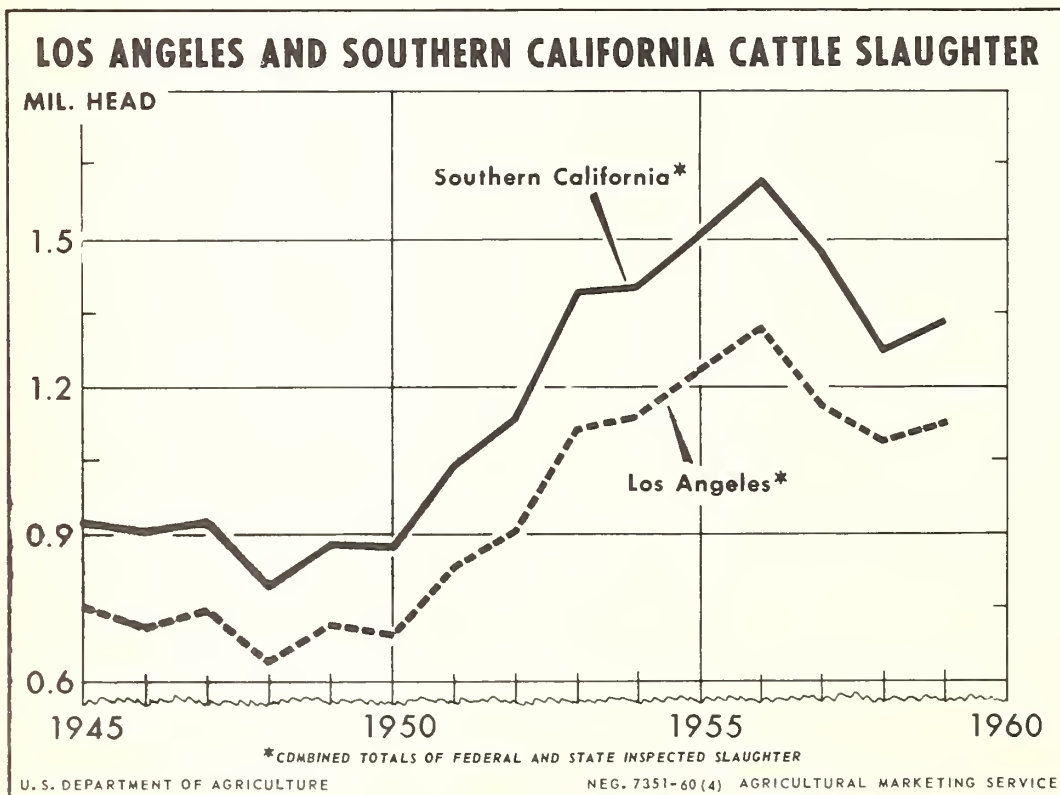


Figure 1

to the equivalent of about the present Good grade, on irrigated pastures and cutover grain fields of California and other western States. In more recent years, the Los Angeles slaughter of cattle has consisted basically of two types: Feedlot animals, and cows and bulls principally of dairy types.

Total cattle slaughter in the United States in 1956 is estimated to have yielded 56 percent steer beef, 13 percent heifer beef, and 31 percent cow and bull beef. ^{11/} Although the Los Angeles terminal market is widely known as a "cow market," only 23 percent of the cattle slaughtered by southern California packers were cows and bulls in 1956, steers and heifers accounting for the remainder. Most of this remainder consists of steers, for several reasons: A percentage, more sometimes than others, of the heifers are held on farms and ranches for breeding; knowing that heifers are not preferred in the Los Angeles market, most producers in the intermountain region send only their steers into California for feeding or immediate slaughter; and many California producers send their heifers elsewhere for feeding or slaughter.

Supply Sources

Southern California packers obtained within the State about 75 percent of the beef animals they slaughtered in 1956. About 22 percent were from other western States and the remaining 3 percent were obtained in Texas, Oklahoma, and midwestern States. Most of their purchases outside California were of beef heifers and steers.

Nearly 70 percent of the beef heifers and steers obtained by Los Angeles packers in 1956 were purchased at commercial feedlots, and nearly all of the remainder were obtained at the Los Angeles terminal market. In contrast, more than two-thirds of the cows and bulls received by Los Angeles packers were purchased at the terminal market, 20 percent at auctions, 8 percent directly from producers, and the small remainder from feedlots. Other southern California packers purchased smaller percentages of cows and bulls, as well as beef heifers and steers, at the terminal market, and larger percentages directly from producers.

Despite the uptrend in cattle slaughter shown in figure 2, receipts of cattle and calves at the Los Angeles terminal market have remained relatively constant since about 1944. The terminal market receipts of cattle dropped from more than half of the total number of cattle slaughtered in Los Angeles to about 31 percent in 1957. This reflects the general trend throughout the United States toward an increased percentage of purchases by packers directly from producers and feedlots. Marketings from feedlots in California increased slowly in the decade before 1949. After that year, however, these marketings rose sharply to about 1.3 million head in 1957, which amounted to about 55 percent of the total State slaughter of cattle and about three-fourths of the beef heifers and steers slaughtered in California.

In addition to beef provided by southern California packers, considerable quantities of carcass beef from out-of-State packers are brought into the Los Angeles area by wholesale distributors, processors, retailers, and others. In 1956, these inshipments, mainly from packers at Denver and midwestern slaughtering centers, amounted to about 100 million pounds, about 10 percent of the total

^{11/} Miller, E. E. "Beef Production by Grade--Revised Data," Livestock and Meat Situation, LMS-94, U. S. Dept. Agr., Agr. Mktg. Serv., Mar. 1958, cover page.

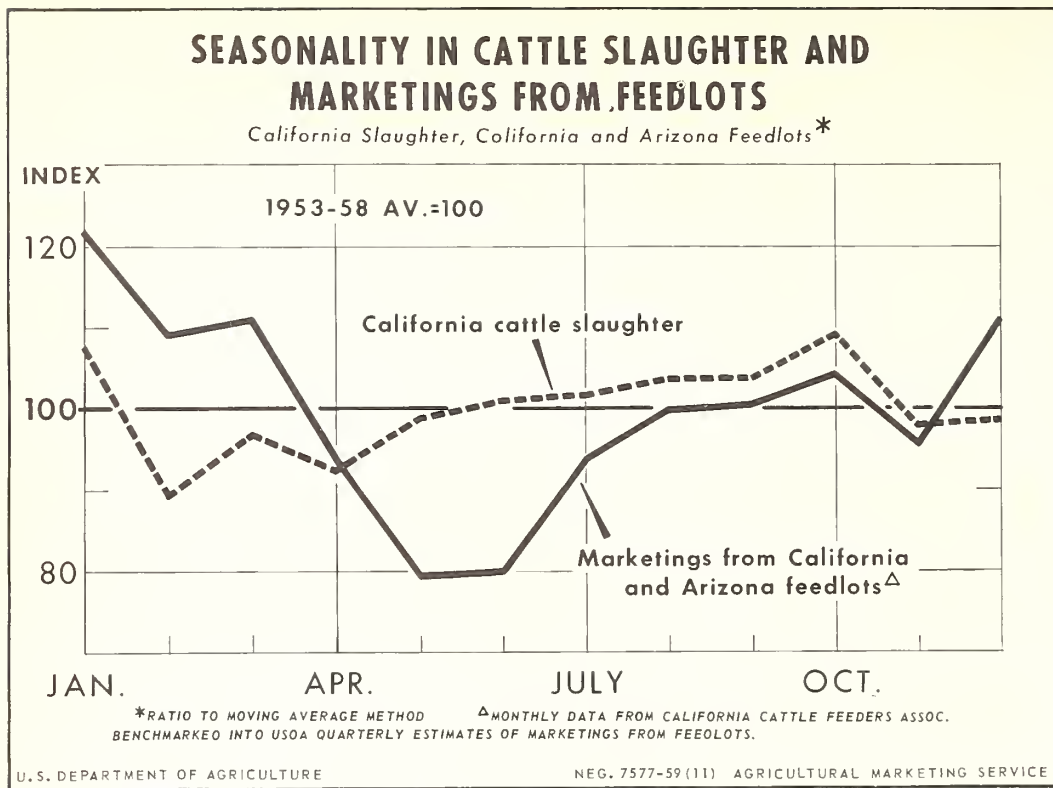


Figure 2

Los Angeles supply and close to 20 percent of the supply distributed in Los Angeles County for fresh consumption. In addition, increasing quantities of lower quality boned beef for processing have been imported into California since the latter part of 1957 from New Zealand and Australia. This makes Los Angeles an international market for certain types of beef.

Seasonality of Slaughter and of Movements
of Cattle to and from Feedlots

Cattle slaughter is more stable seasonally in California than total United States slaughter (table 1). It drops less in California during the winter and increases less during the fall. This probably results mainly from the availability of feedlot cattle in the Southwest and the high rate of cattle marketings from feedlots during the late fall and winter. Warm winter weather and other factors contributing to a relatively high and stable per capita consumption of beef in California also may have some effect.

Feedlot acquisitions and marketings from feedlots in the Southwest are considerably more variable seasonally than slaughter in California. Acquisitions by feedlots usually are at their lowest levels for the year in the winter period of January, February, and March. Through the remainder of the year, however, seasonal patterns in acquisitions of California and Arizona feedlots differ considerably (table 1). In California, acquisitions gradually increase in March through April, and then increase sharply to the highest point of the year in

Table 1.--Seasonal indexes of cattle slaughter, United States and California, and of acquisitions by feedlots, cattle on feed, and marketings from feedlots, California and Arizona ^{1/}

Month	Slaughter (1947-58)		Acquisitions by feedlots, 1953-58		Cattle on feed		Marketings from feedlots, 1953-58			
	Index	Index	Index	Index	Index	Index	Index	Index		
January	104.4	108.6	58.9	81.7	94.4	131.2	103.6	128.3	99.5	121.7
February	87.5	90.2	45.3	62.9	77.0	124.1	89.6	111.4	103.9	109.0
March	94.5	98.5	73.0	52.9	70.4	100.3	78.3	96.5	157.1	111.0
April	91.0	92.4	87.7	62.6	72.4	82.1	75.1	79.8	141.0	94.0
May	96.4	97.3	125.6	79.0	87.4	75.3	83.0	70.6	109.2	79.4
June	97.9	99.7	156.2	112.7	108.7	80.0	101.2	77.2	89.8	80.0
July	99.5	101.3	115.2	83.8	113.8	78.3	104.4	95.2	90.9	93.7
August	105.6	104.0	91.5	92.7	110.5	79.1	102.1	103.8	86.2	99.7
September	107.7	103.9	124.9	103.1	114.5	84.6	106.6	108.0	74.9	100.5
October	112.0	108.1	135.0	168.0	119.1	105.8	116.0	116.9	62.0	104.4
November	103.5	97.4	108.0	170.0	119.8	129.4	122.9	105.9	60.7	95.6
December	99.6	98.6	77.9	130.6	112.0	129.8	117.2	106.4	124.8	111.0
Average	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^{1/} Arizona and California feedlot indexes were derived by benchmarking data obtained on specific feedlots from the California Feeders Association report into the quarterly data published by the U. S. Department of Agriculture. Adjusted annual average equals 100.

June. The flow to feedlots in California then drops to a low point in August and rises again to a secondary peak in October. Acquisitions of Arizona feedlots, in contrast, rise to a relatively low peak in June and reach an exceptionally high peak in November.

Cattle fed with the intention of selling them as Choice grade animals usually remain in feedlots about 120 days; others are marketed earlier. Combined marketings from California-Arizona feedlots drop seasonally through the first part of the year to lowest levels in May and June and rise through the remainder of the year except for a dip in November (table 1 and fig. 2). In California, marketings from feedlots are highest in September through January or February, and lowest in April, May, and June, while in Arizona they increase in December and rise to a peak in March. They remain relatively high in April and drop to about the average level for the season in May through July when the California marketings are at their lowest seasonal levels. The fall slump in marketings from Arizona is offset by the relatively high level of marketings in California.

The complementary seasonal patterns of California and Arizona marketings tend to reduce seasonal variations in the California slaughter of cattle. An increased slaughter of cows and other cattle obtained directly from farms and ranches during the late spring and summer also helps to maintain slaughter volume during that period.

The data on both acquisitions and marketings from feedlots for 1953-58 show that the seasonal patterns vary considerably from year to year. This reduces the accuracy with which packers, retailers, and others can anticipate seasonal changes in supplies and prices. ^{12/} This appears to be a principal source of uncertainty in the Los Angeles market. The data on seasonality also indicate that the seasonal patterns are gradually shifting. In more recent years of the period 1953-58, California feedlot marketings have increased more in the last quarter of the year and dropped more in February and March. Peak marketings from Arizona feedlots appear to have shifted from March to April.

Amplitudes of seasonal variations in combined marketings from California and Arizona feedlots, despite popular beliefs to the contrary, gradually increased over the period 1954-58 (fig. 3). This is another source of marketing problems in southern California markets. The total volume of feedlot marketing dropped, however, after about midyear 1957, and, therefore, seasonal peaks in marketings since that time have been lower than similar peaks in earlier years. This has had a favorable effect on prices in southwestern markets.

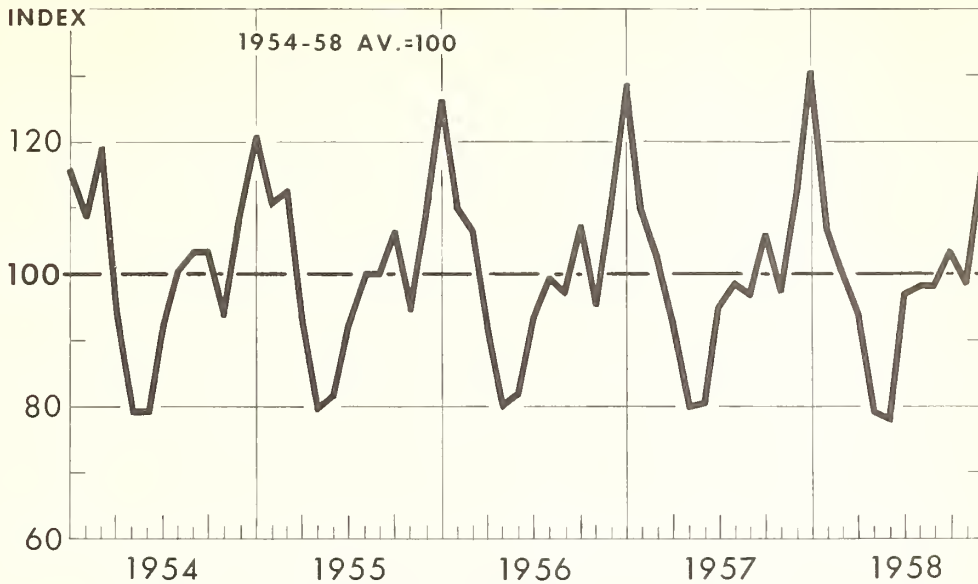
Grades Available

The Good and Choice grades made up a larger percentage of the beef supply in Los Angeles than in the United States (fig. 4). About 54 percent of the beef produced in the United States during 1956 is estimated to have been of Choice or Good quality. In contrast with the national pattern, Choice and Good in Los Angeles represented 70 percent of the total, with Choice alone accounting for 40 percent.

^{12/} This also reduces the reliability and dependability of the seasonal indexes shown in table 1.

CATTLE MARKETINGS FROM CALIFORNIA-ARIZONA FEEDLOTS

Adjusted Annual Seasonal Index*



*DATA FROM CALIFORNIA CATTLE FEEDERS ASSOCIATION, BENCHMARKED INTO USDA QUARTERLY ESTIMATES, RATIO TO MOVING AVERAGE METHOD USED.

U.S. DEPARTMENT OF AGRICULTURE

NEG. 7578-59 (11) AGRICULTURAL MARKETING SERVICE

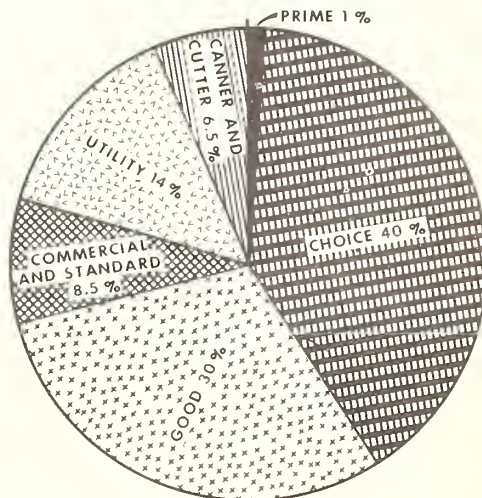
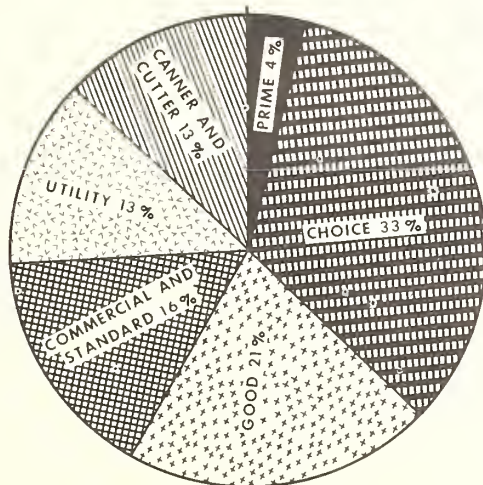
Figure 3

COMMERCIAL CATTLE SLAUGHTER

By Grade

UNITED STATES

LOS ANGELES



1956 DATA

U.S. DEPARTMENT OF AGRICULTURE

NEG. 7350-59 (11) AGRICULTURAL MARKETING SERVICE

Figure 4

About half of the beef produced in the United States is marked with Federal grades. Nearly all of this, however, is Prime, Choice, Good, or Standard grade beef, and, accordingly, a high percentage of the beef qualifying for these grades is federally graded. This percentage is even higher in southern California, where two-thirds of all beef was federally graded in 1956. Nearly all of the beef qualifying for Prime or Choice in southern California probably was federally graded. A high percentage of the Good and much of the Standard grade quality also was federally graded in that area. Only about 10 percent of southern California packers' beef was packer branded. The remaining 25 percent was sold "plain," or without a grade or brand designation.

Within-Grade Quality Available

The sample of 3,000 beef carcasses examined in this study provided representative data by thirds of grades on available supplies of carcass beef sold by packers in Los Angeles for fresh consumption. According to these data, feedlot operators direct their feeding programs to production of low Good and low Choice animals (fig. 5). Beef animals equivalent in quality to the Standard grade are so-called "two-way" cattle. Those in the lower half of the grade usually go to or remain in feedlots while some of those in the top half of the grade are sold to packers for slaughter. As the cattle improve in quality, the feedlot cattle owner probably sells to packers those animals which he believes will not qualify for Choice even with additional feeding, and those that are inefficient feed converters, as soon as he thinks they might qualify for the Good grade. He attempts to feed the remainder to the Choice grade and sells as soon as he thinks the cattle might qualify for this grade. Most of such cattle apparently barely satisfy minimum Choice grade requirements, but a significant percentage qualify as top Good. Few ordinarily reach the top Choice classification.

Low Choice represented 30 percent of the total supply in Los Angeles of beef carcasses sold by packers for the fresh market. The next two most important one-third grade classes were on either side of low Choice. This artificial full grade, top Good through average (middle third) Choice, accounted for nearly two-thirds of the total supply.

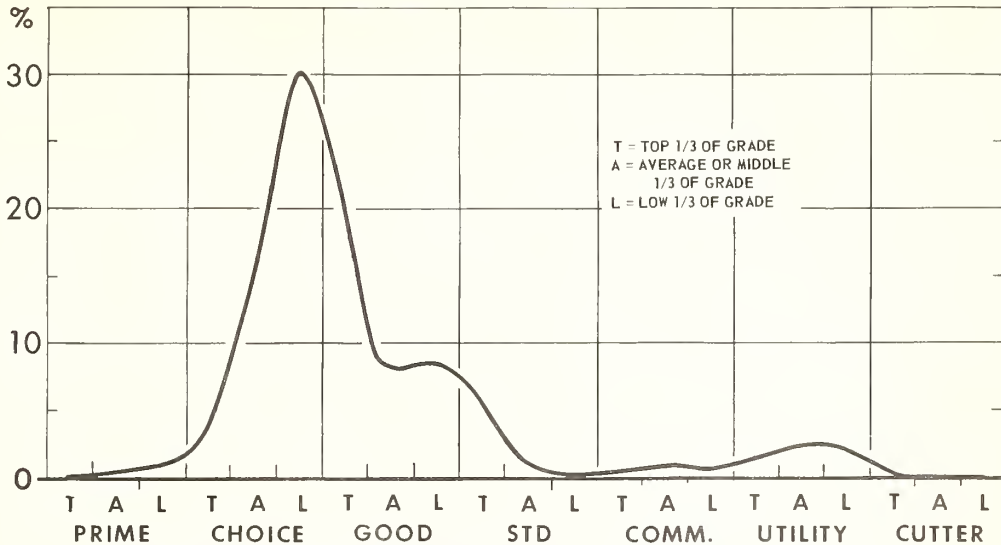
Carcass Weights Available

The weight of beef carcasses generally increases from the Standard grade up through the higher grades. The combined spring and fall samples of carcasses in packers' coolers yielded the following averages: Choice grade 615 pounds, Good 551 pounds, and Standard 531 pounds. Most common (modal) weights were 600 pounds for Choice, 540 pounds for Good, and 480 pounds for Standard (fig. 6). All grades had skewed weight distributions up to 850 pounds or more. The spring sample indicated that Standard grade carcasses probably fell into two groups, the light 340- to 500-pound carcasses, mostly about 420 to 460 pounds, and the heavier 500- to 780-pound carcasses, most typically 560 to 580 pounds.

Beef for Fresh Consumption

DISTRIBUTION OF CARCASSES IN PACKERS' COOLERS

By Grades and Parts of Grades, Los Angeles



DATA DERIVED FROM SAMPLES OBTAINED IN PACKERS' COOLERS DURING SPRING AND FALL, 1957, IN LOS ANGELES.
ALL BEEF DISPOSED OF FOR BONING, SALE IN WHOLESALE CUTS, AND PROCESSING WERE EXCLUDED.

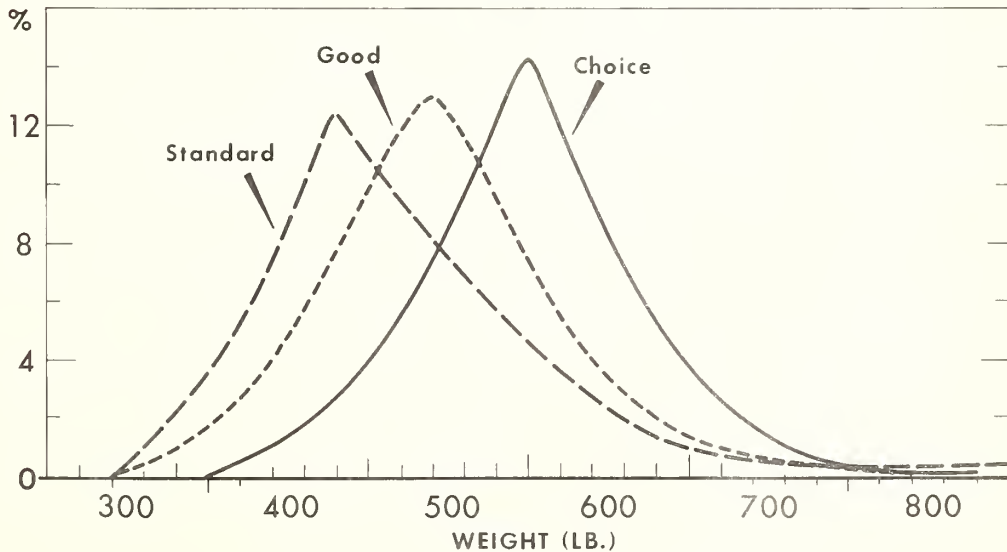
U. S. DEPARTMENT OF AGRICULTURE

NEG. 7347-59 (11) AGRICULTURAL MARKETING SERVICE

Figure 5

WEIGHT DISTRIBUTION OF BEEF CARCASSES IN PACKERS' COOLERS

By Grades, Los Angeles



1957 SPRING AND FALL SAMPLES FROM PACKERS COOLERS

U. S. DEPARTMENT OF AGRICULTURE

NEG. 7349-59 (11) AGRICULTURAL MARKETING SERVICE

Figure 6

Marked changes, as indicated earlier, have taken place in the Los Angeles wholesale beef industry during the last 20 years. Changes at retail and at the producer level are most clearly evident, but changes also have taken place in the slaughtering and wholesale distribution of beef.

Although most of the retail food chain organizations currently operating in the Los Angeles area were in existence by the late 1930's, highly significant changes in the structure of food retailing in that area since 1940 are clearly evident. Numbers of independent grocery stores have dropped sharply, super-markets have largely replaced smaller stores, and both the chains and independent supermarkets have changed their merchandising practices. In 1957, the Los Angeles metropolitan area had more than 600 chainstore outlets, with more than 129,000 tons of beef passing over their counters annually. These stores represented 37 retail food chain organizations, most of which owned and operated stores only in Greater Los Angeles. The high concentration of local-type chains is an important distinguishing feature of Los Angeles.

In response to the changes in retailing, in production and supply of beef, and in other factors, a large number of specialized beef marketing agencies have developed, each taking responsibility for particular functions in the distribution system. Many of the 30 or more packers in the area have become highly specialized. Some slaughter beef animals exclusively, and a few handle only the specified types and qualities of beef desired by those customers taking large volumes of fresh meat. Others are more exclusively engaged in slaughtering cows and bulls for the processed meat trade. With relatively little change in numbers of packers, increasing local requirements for beef have been met by existing plants. Many of these plants are old and inefficiently arranged for handling the volume of beef slaughtered. Most Los Angeles packers are locally owned firms. In the 1940's, several midwestern firms operated slaughtering plants in the area, but by 1958 only two remained in operation.

Wholesale distributors also are becoming more specialized. The beef wholesalers or breakers specialize in the types and weights of beef that can be merchandized most profitably by breaking and sale as wholesale cuts. Wholesalers are the principal importers of beef from other States or market areas. The jobbers concentrate on sales to dining establishments, and most of the large number of truck distributors in the area sell exclusively to independent retailers. The packer branch houses--nonslaughtering, processing, and sales units of midwestern packers--handle relatively little fresh beef, as they are specialized mainly in pork.

More than 911 million pounds of beef became available in Los Angeles for distribution during 1956, of which more than 82 percent was supplied by Los Angeles packers. Some beef, however, was shipped out of the area. About 10 percent of the total fresh supply was processed or sold to processors, an additional 26 percent was either sold to Government agencies or shipped to handlers in other domestic or foreign markets by Los Angeles packers or wholesale distributors, and another 5.5 percent was distributed by Los Angeles retail chains to their stores located outside the county.

13/ For details on organization and structure of the Los Angeles market for meat, see publication cited in footnote 2. Also see Seltzer's publication cited in footnote 9.

About 542 million pounds, or 59.5 percent of the total, was distributed within Los Angeles County (fig. 7). Two-thirds of this supply moved directly from packers to retailers or dining establishments, and one-third was channeled through wholesale distributors. The chains handled 39 percent of the total, considerably less than the total retailed through independent grocery stores, despite the relative growth in sales volumes of chains (fig. 7). Wholesalers or breakers were the principal intermediate distributors of beef, and sold about equal quantities to the retail chains and independent retailers. Jobbers, however, also were important customers of wholesalers.

Demand Characteristics

Beef buyers in Los Angeles, specialized as many of them are, have evolved rather precise specifications regarding types, grades, and weights of carcasses desired and services required. These specifications differ considerably by type of buyer. They also vary widely among buyers of certain types, such as independent retailers, but, in general, similar types of buyers were found to have similar specifications.

Grade Specifications

A high percentage of the fresh beef distributed in Los Angeles is federally graded because grading is a basic requirement in the specifications of most buyers. This has been true only since World War II. During World War II and later during the Korean conflict, beef grading was required by law for effective administration of price controls. During these periods, retailers and wholesalers became familiar with the Federal grade standards.

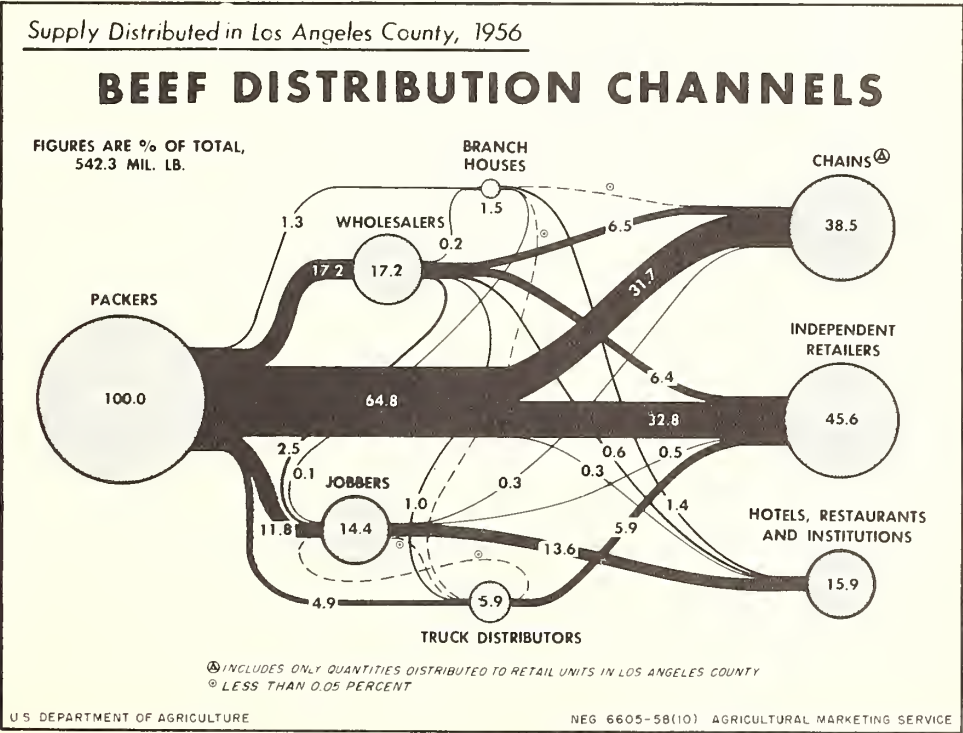


Figure 7

Other factors had a bearing on the decision of many chainstore operators to specify beef stamped with U. S. grades. During and after World War II, grocery retailers in Los Angeles, as elsewhere, were seeking larger volume and lower cost methods of retailing, which contribute to growth in number and volume of chainstores, to supermarket operations, and to self service in grocery stores. Subsequently, many chains and independent supermarket operators began to handle and merchandise the Federal grades to increase their control over quality; others began to specify federally graded beef and beef of a particular grade under the pressure of competition. ^{14/}

Connotation of the word "Choice" also influenced Los Angeles retailers after 1950 in their insistence on Federal grading. In 1950, the designation of the "U. S. Good" quality range was changed to "U. S. Choice" and changes were made in some of the other grades. After this change, the favorable connotation of the word "Choice" was an important factor contributing to a trend toward concentration on U. S. Choice. The supply of fed beef also increased steadily after 1950, but the retailers, as indicated, had been placing increased emphasis on the quality range represented by the present Choice grade about as fast as available supplies permitted.

By 1956, 85 percent of the beef purchased by Los Angeles chains and 68 percent of the total handled by wholesale distributors was U. S. graded. More than four-fifths of the beef sold by the national packer branch houses and truck distributors was federally graded, indicating that many independent retailers also were buying the officially graded product (table 2). Packer brands on fresh beef never have been particularly important in the Los Angeles market. Few independent packers had developed brands for this purpose and those of the national packers did not receive wide acceptance on fresh beef.

Table 2.--Percentages of beef handled, by type of grading and type of buyer, Los Angeles, 1956 ^{1/}

Type of buyer	U. S. graded	Packer-branded	Not graded or branded	Total
	Percent	Percent	Percent	Percent
Packer branch houses	82.9	9.9	7.2	100.0
Wholesalers	60.3	^{2/}	39.7	100.0
Jobbers	70.8	3.6	25.6	100.0
Truck distributors	86.9	1.0	12.1	100.0
Weighted average	68.4	1.5	30.1	100.0
Retail food chains ...	84.5	7.3	8.2	100.0

^{1/} Obtained in general survey of southern California packers in 1957.

^{2/} No purchases of packer-branded beef recorded.

^{14/} For a more complete analysis of reasons for the growth of Federal beef grading, see Williams, Bowen, and Genovese (footnote 1).

In 1956, most of the chains were specifying Choice grade steer beef. Only a few bought Choice grade heifer beef regularly, and these chains shifted more to steers when price differences between heifers and steers narrowed. Choice steers and heifers together comprised about 88 percent of the federally graded beef obtained by Los Angeles chains in 1956 (table 3). The remainder, consisting of about equal quantities of Good and Standard grade beef, was used principally as "budget-priced" items in stores handling Choice, or for exclusive distribution in stores located in low-income neighborhoods. Independent retailers and wholesale distributors also handled high percentages of U. S. Choice.

Within-Grade Specifications

In general, the within-grade qualities purchased by chains and other retailers were lower than might have been expected from their policy statements, while qualities purchased by wholesale distributors were higher.

More than 40 percent of the carcasses purchased by Los Angeles chains fell in the low Choice category (fig. 8). Each of the 10 largest chains tended to concentrate on the lower third of the Choice grade, with the result that low Choice accounted for more than 70 percent of their Choice grade purchases (table 4). Purchases of Good grade by chains were more evenly spread through the grade. Combined purchases of all 37 chains in the market indicated that in buying Good they tended to select carcasses that were either high or low in quality for the grade, but they appeared to favor top Good. In contrast, Good grade purchases of the 10 largest chains reflect the same general pattern as their Choice grade purchases. Among thirds of the Standard grade, the top portion was by far the most popular (fig. 8 and table 4).

Table 3.--Percentage distribution of U. S. graded beef, veal, and lamb, by grade and by type of buyer, Los Angeles, 1956 ^{1/}

Type of buyer	Percentage distribution of U. S. grades			
	Prime and Choice ^{2/}	Good	Standard or commercial and other	Total
	Percent	Percent	Percent	Percent
Packer branch houses	77.6	9.0	13.4	100.0
Wholesalers	60.6	2.8	36.6	100.0
Jobbers	57.7	8.5	33.8	100.0
Truck distributors	62.9	31.7	5.4	100.0
Weighted average	61.2	10.9	27.9	100.0
Food chains	88.3	6.2	5.5	100.0

^{1/} Obtained in general survey of southern California packers in 1957.
^{2/} Includes little Prime.

Table 4.--Percentage distribution of purchases by 10 retail food chains, by thirds of grades for the U. S. Choice, Good, and Standard grades, Los Angeles, 1957

Grade and portion of grade	Group 1 <u>1/</u>	Group 1A <u>2/</u>	Group 2 <u>3/</u>	Total, 10 chains (Group 1 and group 2)
	Percent	Percent	Percent	Percent
Choice:				
Top third	3.3	2.9	<u>4/</u>	3.0
Middle third	25.7	24.3	26.5	25.3
Lower third	71.0	72.8	73.5	71.7
Total	100.0	100.0	100.0	100.0
Good:				
Top third	24.7	24.7	32.3	25.9
Middle third	35.3	35.3	16.1	32.3
Lower third	40.0	40.0	51.6	41.8
Total	100.0	100.0	100.0	100.0
Standard:				
Top third	86.7	78.6	92.0	87.0
Middle third	10.0	14.3	8.0	10.1
Lower third	3.3	7.1	---	2.9
Total	100.0	100.0	100.0	100.0

1/ The 6 largest volume chains in the market area.

2/ The 5 group 1 chains excluding the largest.

3/ Four smaller chains.

4/ No purchases recorded.

Independent retailers as a group handled all qualities of beef but they tended to concentrate either on low Choice, low Good, or Utility (fig. 8). The wholesalers (breakers) purchased much of the Prime grade beef coming to market, but they concentrated on low Choice to about the same extent as the chains. Wholesalers sold most of their Prime and top Choice beef in fabricated form to jobbers. 15/ Jobbers handled a wide range of qualities because their dining establishment customers vary widely in their quality requirements. The pattern for truck distributors was about the same as for independent retailers.

15/ These transfers are not shown in figure 8 because the data reflect only carcass purchases directly from packers.

Weight Specifications

Specifications of the various Los Angeles beef buyers on weight are more exacting in some respects than their specifications on grade level. The chains and other buyers appear to use the U. S. grades as broad indications of quality and to use other guides for specifying the particular carcasses within each grade that they desire. The average carcass weight of beef handled by those chains among the 10 largest that concentrated most heavily on low Choice ranged between 550 and 600 pounds; average weights of the remainder, who handled higher percentages of average or top Choice, ranged between 600 and 675 pounds. Thus, there is a relationship between weight and within-grade quality, and so weight specifications of buyers affect the quality of beef they purchase.

Retailers, both chain and independent, appeared to establish first the limits of the full grade range in which they were interested and then to establish maximum weights which they would accept. They seemed most interested in the lightest carcasses that, from the standpoints of conformation and quality, would qualify for a designated grade.

Jobbers and wholesalers take the heavier weights of Choice and both the lighter and heavier weights of the Good grade (table 5 and fig. 9). Truck distributors also purchase relatively lightweight carcasses. This seems reasonable, as nearly all of the customers of truck distributors are independent retailers.

The frequency distribution of weights in the Choice grade bought by chains, shown in figure 9, is obscured by the figures for one or two chains whose specifications permit them to accept carcasses weighing 700 pounds or more. Chain A specified Choice grade weights between 450 and 720 pounds, but the bulk of the carcasses purchased by this chain weighed between 650 and 700 pounds. Another of the 10 largest chains specified Choice grade up to 725 pounds, and a third indicated that the acceptable range would include 750-pound carcasses. In practice, however, these two chains tended to concentrate on the 550- to 625-pound weight range. Remaining chains appeared reluctant under any conditions to accept Choice grade carcasses weighing more than 650 pounds. The 550-600-pound range was preferred.

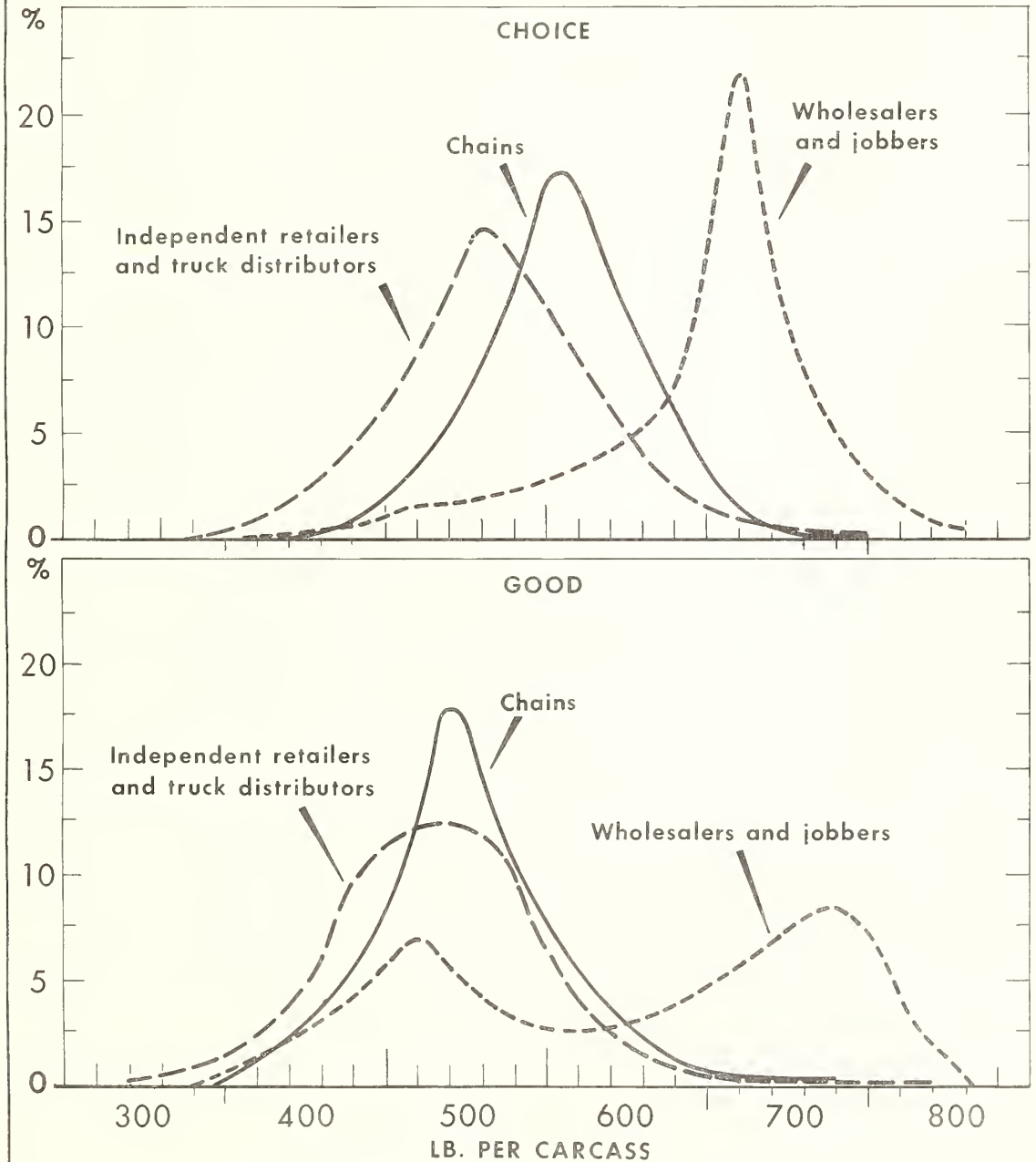
Table 5.--Average carcass weights, by type of buyer, of Choice and Good grade beef, Los Angeles, 1957 ^{1/}

Type of buyer	Choice	Good
	<u>Pounds</u>	<u>Pounds</u>
Chain	616	559
Independent retailer	573	546
Wholesaler (breaker)	706	576
Jobber	686	656
Truck distributor	590	515
All buyers	615	551

^{1/} Combined spring and fall samples from packers' coolers.

WEIGHT DISTRIBUTION OF BEEF CARCASSES IN PACKERS' COOLERS

By Grade and Type of Buyer, Los Angeles



1957 DATA OBTAINED FROM PACKERS' COOLERS IN SPRING AND FALL SAMPLES

Figure 9

Chain A was the principal retail market outlet for Choice grade carcasses in the 650-720-pound weight range. This chain had a meat warehouse, some processing facilities, and an aging program for ribs and hindquarters. The additional trimming and scrap meat from the heavier, fatter cattle purchased by chain A could be utilized to advantage in their meat processing plant. The remaining chains rather uniformly handled the smaller, less wasteful carcasses, partly as a competitive device. Indications are that many of the independent retailers had adopted this same policy.

Policies of most of the chains in buying Good or Standard grade carcasses were similar to their policies on Choice. No chain indicated a preference for Good or Standard grade carcasses in excess of 600 pounds, but a few occasionally purchased heavier weights. The range of 500 to 550 pounds was preferred for these grades.

A comparison of chains' weight preferences with weights actually purchased indicated that, during the fall period particularly, many were buying heavier carcasses than they desired. The average carcass weight of Choice available in the market--615 pounds--was considered excessively heavy by many chains. These facts explain why some chain buyers indicated dissatisfaction with available supplies of lightweight Choice grade carcasses. They recognized the present physical and technological limitations in producing lightweight carcasses with sufficient quality for Choice. However, they appeared to believe that, with a continuing demand for lighter weights and better quality, many of these limitations would be removed through research.

Additional Product and Service Specifications of Retailers

It was clear that most Los Angeles chains and independent supermarket operators attempted to purchase beef that was federally grade rolled, Choice grade, light in weight, superior in conformation with little outside fat covering, and high in quality for the grade as evidenced by degree of marbling, color of the fat and lean, and firmness and texture of the lean. In addition, some required the trimming of particular portions of the carcass and removal of kidneys and certain internal fats. A few set limits on temperature of the carcasses on delivery. Although the specified combination of physical attributes frequently was difficult to find or supply, these requirements illustrate the detail and precision characteristic of retail chain specifications on beef as they become known among suppliers in the market.

All Los Angeles chains require some storage and delivery services of their suppliers. Some, however, receive more service than others. Chain A operates a meat warehouse and accordingly requires less service than most others. Purchases of this firm are delivered in truckload lots, usually within 48 hours after slaughter, to the chain's meat warehouse, which is located within a few blocks of most Los Angeles meatpackers. The other chains and most independent supermarkets use packers' coolers as their warehouse. Many maintain inventories in these coolers continually. The average time for these holdings varies between 1 week and 10 days. Inventories held by packers are delivered to individual stores on request and in quantities specified by the retailers.

The local packers make no special charges for use of their coolers, for shrinkage costs incurred by holding chainstore beef in their coolers, or for delivery within the metropolitan area. Carcasses are weighed as they leave the coolers, and packers receive payment on the basis of these weights and prices established at the time of sale.

Most types of buyers remit to packers' or other suppliers weekly, but credit frequently is extended by the suppliers for longer periods. Longer credit is most frequent in sales to institutions and in instances where suppliers are competing for the patronage of a newly formed wholesale or retail meat outlet or of a particularly desirable volume buyer. The volume buyers, however, usually prefer to deal on a cash basis.

From the standpoint of the packers or other suppliers, services are added sales costs made necessary by competition. For instance, packers estimated that their cooler shrinkage averaged 3 percent. This is \$1.20 per hundredweight on beef selling wholesale at \$40 per hundredweight. Within the metropolitan area, delivery costs were conservatively estimated at \$0.50 per hundredweight. Although rental cost of cooler space could not be determined, it must be accounted as an additional service cost incurred by packers.

MARKETING PRACTICES

Structure of the market and competition probably are the most important factors influencing marketing practices for beef in Los Angeles, but supply and demand characteristics, technological developments, and custom also have been important. The development of large-volume specification buyers and increased competition at all levels of the trade have affected every facet of beef marketing, even the production of particular weights and grades.

Packers' Marketing Practices

Marketing practices of Los Angeles packers in buying cattle and in selling beef are similar in most respects to marketing practices of beef packers found elsewhere. Principal differences are explained by the relatively high degree to which many Los Angeles beef packers are specialized, the proximity of large supplies of cattle in commercial feedlots, circumstances of location requiring local distribution of most of the beef produced locally from slaughter, and the relatively high degree of concentration at the retail level.

Meatpackers, wherever located, usually emphasize volume, because both overhead plant costs and other plant costs, consisting principally of labor costs, increase rapidly on a per unit output basis as volume drops. Most Los Angeles packers, however, appear to face some serious difficulties in this regard, particularly during the winter and spring. The number of packers in Los Angeles is relatively large, and temporary shortages of locally dressed beef ordinarily can be quickly supplemented by inshipments of carcasses from Denver and elsewhere.

Los Angeles packers, like most others, buy most of their beef for cash on the basis of live weight and estimated grades and yields (dressing percentages), and sell largely on the basis of known carcass weights and grades. Only a few

operate meat processing facilities and, among the packers handling beef, about half are specialized to the extent that beef comprises 90 percent or more of their total sales. Most sell the dressed product, primarily in carcass form, in volume to retail chains, wholesalers, jobbers, and truck distributors. They believe that in so doing they have little opportunity to merchandise their product. According to the packers, they sell on a specification basis at established market prices. In addition, most of the packers, largely as a result of their accounting procedures, expect to sell beef carcasses for about the same total dollars that they paid for the live animals and to make a profit, if any, from the sale of edible and inedible offal. In practice, as will be shown later, they frequently receive less for carcasses than they paid for the animals. As a result, Los Angeles packers place considerable emphasis on skill in buying and on "buying right," by which they mean accurately estimating grades, weights, dressing percentages, and probable shrinkage, paying the market price or less for the grade and weight of beef animals purchased, and minimizing costs of transportation to the slaughter plant.

Buying Practices

Los Angeles packers receive the various live and wholesale market news price reports. Prices on country sales out of feedlots are reported at Visalia in the San Joaquin Valley, at El Centro in the Imperial Valley, and at Phoenix, Ariz. In addition, livestock prices are reported on terminal market sales at Los Angeles and Stockton. The market news service ceased reporting the San Francisco market on live cattle early in 1959, because sales were too few and scattered.

Information on supplies of cattle available and volume of sales at feedlots is less adequate. Quarterly data are published by the Crop and Livestock Reporting Service on inventories of cattle in feedlots, and a private report shows, on a weekly basis, cattle moving into, marketings from, and numbers on feed in the larger commercial California and Arizona feedlots. ^{16/} Nevertheless, there appears to be considerable question among Los Angeles packers at any particular time regarding supplies of cattle on feed that are or soon will be readily available for slaughter. This leads to conjecture, rumors, and, frequently, to decisions in buying or selling that would not have been made on the basis of more complete information.

Packers are in daily contact with feedlots, auctions, many producers, and the terminal markets. Although they usually pay cash, they sometimes buy on grade and weight or consignment terms. In grade and weight selling, an agreement is made on price at the time of sale, but the price is made to depend on the carcass grade and weight of the animals. Packers who obtain cattle on consignment slaughter them, and sell the carcasses for the producer. For these services, the packer receives a consignment fee, which usually involves the edible and inedible offal. ^{17/}

^{16/} Monthly cattle on feed data were initiated in 1959 by the Crop and Livestock Reporting Service for California and Arizona.

^{17/} For a more complete discussion of these buying methods by southern California packers, see publication cited in footnote 2.

In buying at feedlots, packers frequently deal with the feedlot operators, who often perform the selling service for producers who have cattle on feed at the lot. In other instances, packers are required to deal directly with the producers who own the cattle. The packers circulate through the various feedlots from time to time noting progress of the various lots of cattle. When they notice that particular lots are nearing the desired level of finish, they begin the bargaining process with the owners or feedlot operators. This may require several short discussions extending over several days or even weeks. Typically, the packer agrees to take the more highly finished animals in truckload lots as they reach the desired degree of finish. So-called "tag ends" of the lots frequently are sent to the terminal market to be sold through commission agents. There seems to be a general belief that higher net returns can be obtained on these "tag ends" at the terminal market, where there are buyers for every type of animal, than at the feedlot, where most buyers are more specialized. There is some basis for this belief, because packers look mainly to the terminal market for their supplies of cows and other lower grade beef.

Merchandising Practices

In selling to volume accounts, packers say that they cannot merchandise beef carcasses in their coolers through the traditional bargaining procedure. Sales by specification in large-volume lots at established prices, packers say, prevent them from receiving more for higher than for lower quality carcasses within each grade. Through a variety of means, however, packers do attempt to merchandise their beef. The first step in this process after slaughter is to request official grading. Most prefer to have the Federal grader go through the cooler and block stamp the carcasses. ^{18/} This stamp represents the grader's initial decision regarding grade. Some packers ask for Federal grading only on carcasses that will qualify for Choice, others request block stamping on all Good and Choice, and still others have all carcasses in the cooler block stamped. Nearly all have more carcasses block stamped than ultimately will be sold federally graded. ^{19/}

At the point where the actual merchandising process begins, the packer must decide which carcasses will be rolled with a Federal grade stamp and which will be sold as though ungraded. If they are not rolled, the block stamp is removed. The packer's decision depends upon a number of factors, including market conditions, specifications of his retailer accounts, and other orders that must be filled. Most packers grade roll all carcasses that qualify for Choice. To this end, the packers frequently delay the decision on many Good grade carcasses for a few hours or until the following day in the hope that they will improve in the appearance of quality enough to qualify for Choice. Initially, these usually are liner carcasses in the top third of the Good grade. Top Standard carcasses may be handled in a similar manner. Ultimately, packers may have all Good and Standard grade carcasses rolled as a general policy, or only enough to fill particular orders.

^{18/} Block stamping is the process of tentatively designating carcasses at several points with a stamp mounted on a small block.

^{19/} For a more complete description of procedures followed in grading, see Williams, Bowen, and Genovese (footnote 1).

Carcasses known to meet specifications of particular chains usually are separated from others and hung or "railed" together. The buyer for the chain is called, attributes of these carcasses are extolled, and the buyer is asked to stop by for a personal inspection. A price may or may not be quoted at this time. Turning his attention to other buyers, the packer may permit truck distributors and some of the larger independent retailers to select at will from among remaining carcasses. Smaller volume buyers usually pay \$0.50 to \$1 more per hundredweight than chains or other buyers for the same carcasses.

Los Angeles packers attempt to maximize the percentage of their sales going to large-volume chains. Most realize, however, that purchases of any particular chain vary considerably from week to week and that, accordingly, there is considerable risk in permitting purchases of any one such customer to become large in relation to their total volume. They attempt, therefore, to become important and regular suppliers of several chains.

After selling as much as possible of his beef to truck distributors, chains, small volume buyers, and independent supermarkets, the packer turns his attention to wholesalers, jobbers, and processors, or to his own breaking operation, if any. The wholesalers (breakers) and jobbers, the breakers particularly, are convenient volume outlets for carcasses that do not meet chainstore specifications. For instance, Choice grade carcasses weighing more than 700 pounds, Good grade beef that failed to qualify for Choice because of a deficiency in conformation, and certain others may be offered to wholesalers or jobbers. The wholesaler frequently pays a slight premium for top Good carcasses because some of the wholesale cuts from these carcasses will grade Choice. These, principally, are carcasses with a deficiency in conformation for Choice.

Most independent packers did not maintain facilities or work crews for breaking in 1957. In 1958, however, many of the packers made a concerted effort to claim or reclaim the breaking operation. Packers had the advantage of another enterprise--the sale of carcasses--and some possibly were in position to subsidize their breaking function, if necessary, from income from this other enterprise. The breakers, on the other hand, were specialists in the merchandising of wholesale cuts and were intimately acquainted with the needs and requirements of the various types of buyers for cuts. They could handle a large order for a particular wholesale cut and readily find outlets for remaining cuts, whereas some of the packers experienced difficulty in this regard. Through 1958 and early 1959, however, the retail chains in Los Angeles gradually increased purchases of wholesale cuts to a level where both breakers and packers maintained relatively large sales volumes.

Procurement Practices of Chains

Among the many decisions which the meat buyer for a food chain must make are how much to buy, when to buy, form of beef to purchase (cuts or carcasses and types of cuts), type and location of supplier to patronize, and how much to pay. Each chain had devised procedures for making these decisions and taking action in accordance with them. With the principal exception of chains A and E, these procedures among the various chains were basically similar. Special procedures of chain A stemmed largely from two considerations, the large volume of beef purchased, and meat warehouse operation.

The Decision-Making Process

The Los Angeles chainstore beef buyer approaches the decisions he must make by referring to information that includes (1) current retail prices in the chain's own stores and prices in stores of competing chains, as provided by a commercial report and hired observers; (2) live animal prices and wholesale prices on carcasses and cuts, as provided by Federal-State Market News reports; (3) wholesale prices of cuts, carcasses, and offal from The National Provisioner, published in Chicago; (4) the trend in numbers of cattle in feedlots, from a commercial weekly report; (5) rumors obtained in the market on recent prices paid by competing chains; (6) telephone information from packers and wholesalers on available supplies and prices of carcasses and cuts meeting the chain's specifications; (7) inventories on hand in packers' coolers or the chain warehouse; and (8) other general information obtained from trade reports.

The retail chain meat buyer must aggregate and consider the orders he receives each day from individual store units. But more than this, he usually must anticipate these orders. Stores place orders with the buyer only a day or two in advance, but the buyer usually must make his purchases about 1 week in advance of their distribution to stores. A longer period is required if the chain has an aging program.

Considerable variation from day to day and from week to week in the volume of orders from stores complicates the job of the chain meat buyer. He knows, however, that the orders will be affected primarily by prospective weekend sales or specials on beef and on other red meats and poultry, but that weather, holidays, market prices, and other factors will have their effects.

Many additional factors must be considered in scheduling a special on beef. Commitments from suppliers at least 10 days in advance usually are required for a sale. Chain buyers usually like to obtain commitments on three-fourths or more of the supply required for a sale before proceeding with advertising copy and other necessary arrangements. This protects them against price increases or a squeeze on needed supplies, and has the effect of transferring the price risk to suppliers. It usually requires the purchase of beef prior to slaughter of the animals.

In scheduling sales or specials, the chain buyer must also consider probable actions of his competitors in this respect. For instance, a chain buyer may discover that several of his competitors will feature chuck roast on a particular weekend. From previous experience, he knows that this often leaves some wholesalers or packers who break beef with an unusually large supply of hindquarters. Buying strategically in accordance with this deduction, this chain buyer may decide to schedule a special sale on hindquarter cuts.

Inventories held by chains in packers' coolers or in meat warehouses provide chain buyers with some flexibility in their buying operations. With purchased supplies on hand, it is not necessary for them to plan purchases in strict accordance with current requirements of individual store units. Instead, they can decide to advance or delay their purchases a few days to take advantage of special market conditions.

Being well informed and knowing his situation regarding store requirements, inventories, and the degree of flexibility that can be exercised, the chain beef buyer can begin to make decisions. Ordinarily he begins to balance one consideration against another and to make some tentative decisions before beginning the actual bargaining process. This process differs to some extent among the various chains.

The "offer and acceptance" buying procedure.--Two Los Angeles chains used slightly different offer and acceptance systems of procuring beef. Before February 1957, one of these, chain A, received written offers for the following week from packers, specifying prices and quantities. The chain's meat buyer considered the offers on Thursday of each week and made known his acceptances on Friday. This procedure was adopted to reduce the cost of procuring beef and to provide all packers with an opportunity to sell to the chain. When buying was on a detailed specification basis, personal inspection of the beef in packers' coolers was not considered necessary. The beef would be inspected for conformance to specifications on delivery, and, if necessary, rejected at that point. In view of the volume of beef required weekly by the chain, procurement on the basis of personal inspection in packers' coolers and bargaining with each supplier would have made it necessary for the chain to hire many additional buyers and would have required much additional time and expense of both the chain and the suppliers. Nevertheless, some general dissatisfaction and criticism of the procedure developed among packers, so it was changed.

After February 1957, both chains using the offer and acceptance system received from packers about 10 to 20 offers during the week, by telephone on any day. Any packer or other supplier, as before, was free to place an offer with these chains. Offers were considered and accepted daily, but the buyers were instructed not to engage in a bargaining discussion at the time that the offers were made. Instead, they were instructed simply to receive and record the information. Suppliers were given no information regarding current requirements.

In considering offers, the chain E buyer said he determined a price which he considered necessary to obtain his full requirements, and paid this price to all vendors whose offers he decided to accept (fig. 10). This system requires bargaining with some suppliers after all offers have been received. Under this system, according to conditions assumed in figure 10, the price paid to one supplier by chain E theoretically would be higher than the price specified in the supplier's offer. In return, the chain would expect this supplier at some future time to accept a lower price than specified in his offer.

The chain A buyer said he engaged in no bargaining at any time. Instead, he purchased up the scale of prices by first accepting the offer of the supplier offering to sell at the lowest price and then progressively accepting the higher priced offers until requirements had been filled. Under this system, each supplier whose offer was accepted would be paid the price he had specified (fig. 10). If prices and quantities offered to the two chains and their requirements were the same (which they were not), the one paying one price to all vendors would pay a higher average price than the other.

In practice, there frequently was little difference in offering prices of suppliers. This circumstance in each case would tend to flatten out the supply-price curves of both chains in figure 10 so that they approached horizontal lines

coinciding with the price paid to all suppliers. With offers usually exceeding requirements and with small differences among offering prices, the chains using these systems sought other criteria for selecting from among the offers. One, chain E, selected largely on the basis of inspection in packers' coolers, which, in effect, meant abandoning the offer and acceptance system. The other used various criteria by considering individual circumstances of suppliers. At times it appeared necessary for chain A to select on a straight percentage basis. Highly dependable suppliers who consistently delivered beef well within the chain's specifications sometimes were favored. But the chain pointedly avoided buying heavily from a packer for a time and then dropping him. Also, in accepting offers on a percentage basis among suppliers, quantities required for full truckloads were considered. Offers of about nine packers, on the average, were accepted each week by chain A in buying Choice grade beef.

There are a number of advantages and disadvantages in the offer and acceptance system as practiced by chain A. The system reduces both procurement costs of the chain and selling costs of packers. From the standpoint of the chain, it provides the chain buyer with opportunity to consolidate information on available supplies and offering prices for careful consideration in his office before making any buying decisions and without revealing his needs or his feelings regarding how badly he needs or wants the supply offered by a particular packer. It also places him in a somewhat better position to reject some or all of the offers and to buy more or less from distant sources. On the other hand, the system makes it more difficult for the chain buyers to attain a personal "feel" of the market and to judge the relative strengths of supply and demand forces operating in the market.

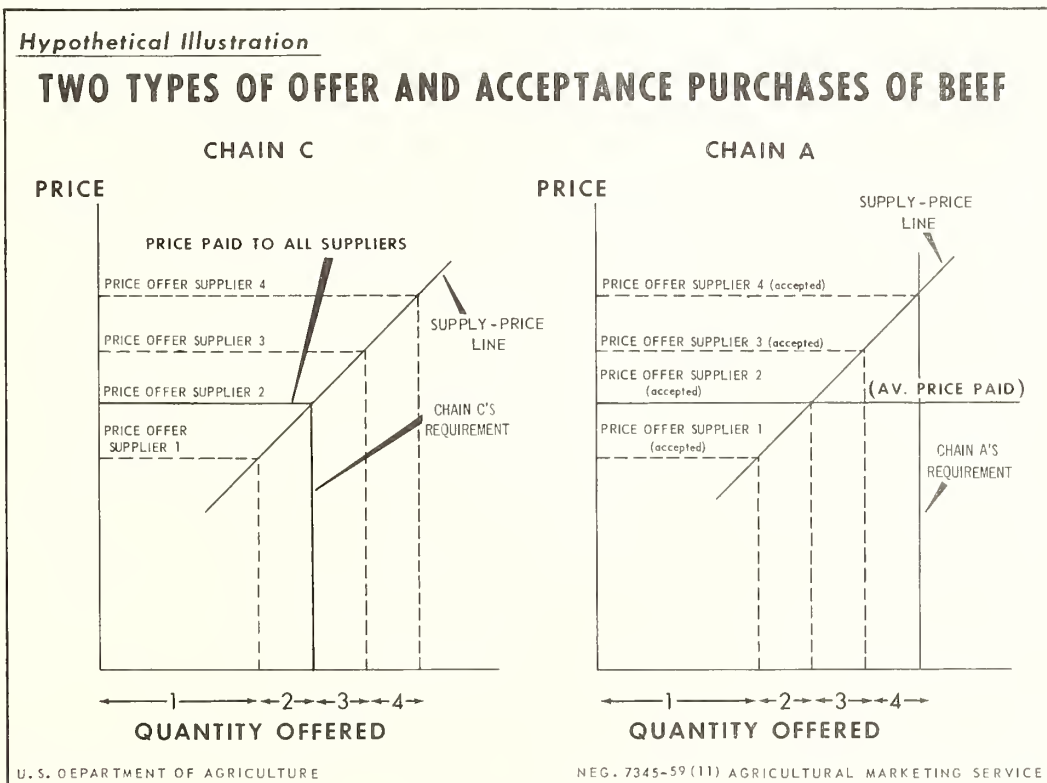


Figure 10

An improved knowledge or understanding by the chain and purchases by negotiation could result in disadvantages as well as advantages to the packer. Nevertheless, packers dislike the impersonal nature of the system and say that it prevents the chain buyer from understanding or considering their individual circumstances. The packer ordinarily has considerable confidence in his own merchandising ability and prefers the face-to-face bargaining situation. In addition, he receives no counter-offer under this system and, not knowing the offers of other packers, feels he has little or no basis for or opportunity to adjust his offer if this becomes necessary in order to complete the sale. This probably is the principal disadvantage of the system as viewed by the packer. Although chain A exercises care in accepting offers and tries to avoid bypassing regular suppliers, packers feel that they are at the mercy of the chain in this regard. But this probably would be the situation under any buying arrangement. In addition, the system does provide all suppliers with about an equal opportunity to sell to chain A. In general, the system of chain A appears to work satisfactorily despite occasional rather general outbursts of dissatisfaction.

Procurement Practices of Other Chains

Most of the other chains used the traditional technique of packer cooler inspection and bargaining in buying beef. Their methods, however, usually contained elements of the offer and acceptance system. As mentioned earlier, the standard procedure among chain buyers was to collect as much information as possible by telephone before visiting packers' coolers. This information usually contained some data on numbers and offering prices of carcasses set aside for their inspection by particular packers. In addition, several chain buyers said that they attempted to pay the same price to all suppliers on a given day for a particular weight and grade of beef. According to the packers, several of the chain buyers seemed to search for the lowest offering prices that could be found among the suppliers and attempted to obtain supplies from all packers at this price.

Prices paid by competing chains were a principal consideration of most chains in judging the reasonableness of offering prices and in determining prices they should pay. Prices paid by chain A on an offer and acceptance basis appeared to be generally known in the market about as soon as they were released by the chain to packer suppliers, and these prices were considered by most of the other chains in buying. Impressions gained in discussions with retailers indicated, however, that chain A procurement prices had less effect on decisions of the other chain buyers than is generally believed.

Most chains had evolved additional criteria. Among these were (1) wholesale market news reports, together with extension of price trends and mental adjustments for seasonality, and (2) prices of slaughter livestock, together with estimates of packers' slaughter margins or costs. The few who referred regularly to livestock prices usually adjusted prices paid by packers a few days earlier, as determined from the market reports, to a wholesale carcass basis, by dividing by standard yield percentages for the grade. Thus, a reported price of \$24 per hundredweight for live Choice grade animals, divided by a yield of 0.60, gives a wholesale price of \$40. In this case, the chain buyers would expect to pay \$40 or less, because they know that packers usually expect to sell carcasses for about the same total dollars as they paid for the live animals.

One or two chains regularly placed standing orders with particular packers. To maintain flexibility, however, these chains placed standing orders only for a portion of their usual weekly requirements.

Levels and Variations in Number of Carcasses
Purchased by Chains

Quantities and types of beef purchased by the 10 chains for which detailed data on a daily basis were collected reflect closely their policies and specifications. The 10 chains purchased more than 115,000 beef carcasses during a 37-week period of 1957. The average weekly purchase of carcasses per chain was 312, but, as there were wide differences among the chains in number of stores and quantity of primal cuts utilized, there were great differences among them in weekly average carcass purchases. The average was 217 for group 1A chains, considerably more for chain A, and 80 for the smaller group 2 chains.

All 10 chains handled Choice grade steer beef, and all except 2 handled Choice grade steer beef primarily (table 6). One of the two exceptions specialized mainly in ungraded beef equivalent in quality to top Standard and low Good. The other purchased Choice grade heifer beef exclusively during most of the period and switched to steer beef late in the year when the price differential between steers and heifers narrowed. These exceptions were group 2 chains. Heifer and ungraded beef, as shown in table 6, represented higher percentages of the group 2 chains' purchases than of purchases by the others. Six chains, three group 1A and three group 2 chains, purchased Good grade steer carcasses. The number purchased by the three smaller chains, however, was nearly twice the number obtained by the larger ones. Four chains, all in group 1, purchased some Standard grade steer carcasses. These all were utilized either as the second grade in stores handling Choice, or in a few stores located in exceptionally low-income neighborhoods.

Table 6.--Percentage distribution of number of beef carcasses purchased by retail chains, by grade, Los Angeles, February 18-November 1, 1957

Chain or chain group	Steers			Heifers	Other ungraded	Total
	Choice	Good	Standard			
	Percent	Percent	Percent	Percent	Percent	Percent
Group 1 ^{1/}	88.7	4.9	6.4	0	4/	100.0
Group 1A ^{2/}	79.7	10.5	9.8	0	4/	100.0
Group 2 ^{3/}	54.9	19.3	0	4.8	21.0	100.0
Total	85.3	5.7	6.3	0.5	2.2	100.0

^{1/} Six largest chains.
^{2/} Six largest chains excluding chain A.
^{3/} Four smallest of the 10 chains.
^{4/} Less than 0.05 percent.

Day-to-Day Variations in Quantities Purchased

Data on day-to-day variations in carcass beef purchases indicate a mixed pattern among the 10 chains for which data were obtained. The larger group 1 chains usually purchased heavily on at least 2 days in the week, whereas the group 2 chains, for the most part, were 1-day-a-week buyers. Chain A bought most of its beef on Mondays, Wednesdays, and Fridays, and the largest group 2 chains rather uniformly bought heavily on Thursdays, but there was a varied pattern among the group 1A chains. For example, one bought most heavily on Mondays and Fridays, another chose Wednesdays and Fridays, while still another purchased about equal quantities on Mondays, Wednesdays, and Fridays.

Most chains apparently do not change their day-to-day buying patterns greatly with changes in the trend of prices. The data on some individual group 1 chains, however, show that buyers for these chains tended to buy more heavily early in the week during periods of rising prices and more heavily toward the end of the week during periods of falling prices.

Week-to-Week Variations in Carcass Purchases

Wide variations from one week to the next were observed in numbers of beef carcasses purchased by Los Angeles chains (fig. 11 and table 7). Purchases by group 2 chains varied considerably more relative to individual firm averages than those by other chains, but week-to-week variations in purchases by most group 1 chains also were large (table 7). Among individual chains in each group, increases in purchases from one week to the next of more than 100 percent and reductions of more than 50 percent were not unusual.

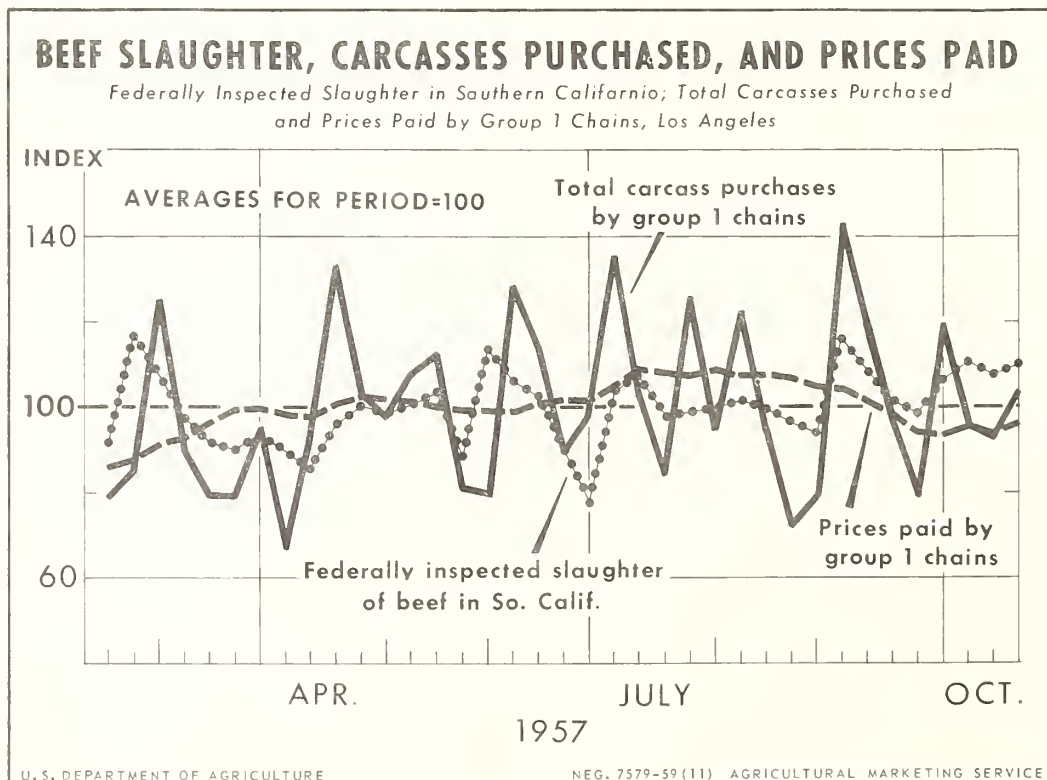


Figure 11

Table 7.--Coefficients of variation in weekly purchases by 10 chains individually and by groups, 37-week period, 1957 1/

Chain group	Type of carcass beef purchased		
	Choice grade steers	Other	Total
	Coefficient	Coefficient	Coefficient
Individual chain:			
A	37.3	154.6	35.0
B	31.0	48.8	24.3
C	29.9	<u>2/</u> 0	29.9
D	43.4	38.3	38.7
E	43.7	38.7	35.5
F	29.4	<u>2/</u> 0	29.4
Simple average for group 1:	28.5	46.7	32.1
G	73.6	63.9	57.2
H	103.0	50.1	47.5
I	46.5	96.8	45.0
J	102.7	67.5	53.3
Simple average for group 2:	81.5	69.6	50.8
Totals:			
Group 1 (A-F)	22.1	42.4	19.0
Group 1A (B-F)	16.9	32.5	15.8
Group 2 (G-J)	35.9	43.8	23.9
Total (10 chains)	20.6	30.4	17.1

1/ Coefficients of variation measure the relative degree of variation in the data. Thus, a coefficient of 80 for one chain, here, would indicate that purchases by this chain were roughly twice as variable from week to week as purchases by a chain with a coefficient of 40. Coefficients of variation for the simple averages are directly comparable with the coefficients for individual chains but the coefficients for each of the group totals can be compared only with coefficients for other group totals.

2/ No purchases of "other."

Most of the weekly variation in total purchases of beef by group 1 chains stemmed from variations in their purchases of Choice grade beef, because these chains handled relatively little beef of other grades. 20/ The purchase by chains of beef other than Choice sometimes tended to increase the week-to-week variation in total carcass purchases, but more often these purchases tended to reduce the variation (table 7). 21/ Much of the variation in Choice grade purchases by group 1 chains, in turn, arose from variations in purchases by Chain A because this chain handled considerably more beef of this grade than

20/ Variations in purchases of Choice grade carcasses by group 1 chains and of total carcass purchases by these chains were almost perfectly correlated.

21/ This and related factors are treated in more detail on p. 36.

the others. In relative terms, variations in chain A's purchases of Choice grade beef were smaller than those of two other group 1 chains, but they were above average for the group (table 7).

A marked degree of correspondence among the chains was evident in the timing of increases and decreases in purchases. Purchases of each group 1 chain during 37 weeks in 1957 were highly correlated with purchases by each other chain. Apparent reasons for this uniformity were (1) uniform recognition among the chains of changes in price relationships or other economic factors, (2) rather uniform reactions to changes in economic conditions, and (3) the compulsion, expressed by chain representatives, to meet competition with competition.

As most southern California packers operate federally inspected plants, comparisons were made of variations in total federally inspected slaughter of beef in southern California with variations in total beef purchases by group 1 chains (fig. 11). It was clear from these comparisons that the chains tended to buy larger volumes of beef during any week when slaughter rose above average or during the following week than at other times. Below-average volumes of purchases by chains also were associated with below-average levels of slaughter. 22/ Relatively small percentage changes in slaughter, however, were associated with relatively large percentage changes in carcass purchases by the chains. 23/ They occasionally increased or decreased their purchases sharply with little or no change in slaughter. There was no measurable relationship between weekly variations in purchases of beef by group 1 chains and weekly variations in prices paid by these chains.

Several of the chain buyers stated in interviews that their retail sales volumes varied even more than did their purchases and that their inventories were used as a buffer against the large changes in sales volumes. Through price specials, they said, retail sales volumes in any week could be changed by 50 percent or more. As prices of beef rise relative to veal, pork, lamb, or poultry, the chains, according to some of them, schedule more price specials on these other meats and fewer on beef.

Data on price specials most prominently displayed in a local newspaper were compared with beef purchases of each group 1 chain. Results were as follows: (1) One or more of the chains advertised special prices on beef during each week of the 37-week period, but in any given week the chains all tended to feature the same species; (2) at times, beef was most prominently displayed or featured when beef prices were high relative to prices of competing meats; (3) about 47 percent of the most prominently displayed specials during the 37 weeks were on beef, while 53 percent were on other red meats and poultry; (4) during weeks when chains' purchases were highest, 58 percent of the specials were on beef; in the week following, 56 percent of the specials were on beef; in remaining weeks, only 35 percent of the most prominently displayed specials were on beef.

22/ The correlation coefficient, $R = .44$, was barely large enough to indicate a statistically significant relationship. It is obvious, however, that the coefficient was reduced by the occasional tendency of chains to buy heavily during the week following a week of high-level slaughter.

23/ In terms of total carcasses, of course, changes in total federally inspected slaughter volume in southern California greatly exceeded changes in purchases by the six group 1 chains.

An index reflecting the extent as well as the frequency of price specializing on beef was constructed and compared with total beef purchases by group 1 chains (fig. 12). ^{24/} The index shows relative changes in the difference between weighted average regular or nonsale prices on certain standard retail cuts, and average prices on the same cuts that include effects of price specials by group 1 chains. Thus, an increase in the index means that (1) more of the chains were scheduling specials on beef, (2) some chains were offering specials on a wider variety of cuts, or (3) price reductions represented by the specials on particular cuts had increased. Each of these situations presumably would be associated with an increased volume of sales by chains, and increased purchases or reductions in inventories, or both.

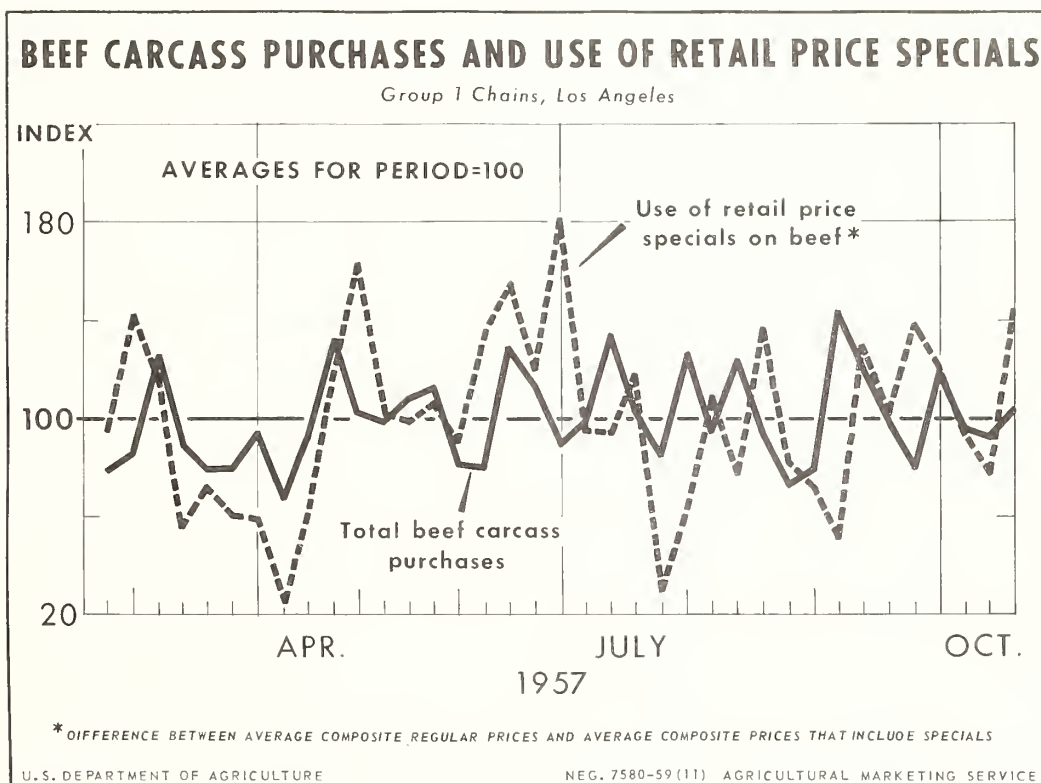


Figure 12

^{24/} Differences for each week between the two following sets of values were used as the basis for the index: (1) The retail value of steaks, roasts, and ground beef from a typical Choice grade steer for each week, using an average of regular (nonsale) prices obtained from three of the Los Angeles chains; and (2) the value of the same steaks, roasts, and ground beef for each week, using average prices constructed from the special prices advertised by each of the group 1 chains and regular prices where appropriate. A standard set of yield percentages (cutting test data) representing 64.5 percent of total carcass weight was used in constructing both sets of values. In averaging prices for the value series that included specials, retail prices received by chain A were weighted by 2/7ths and prices of the remaining 5 chains each were weighted by 1/7th. In instances where no specials were advertised on a particular cut and regular prices were unknown, the average regular price on that cut for the week was used.

It is apparent from figure 12 that the frequency and extent of price specializing on beef by the chains and variations in chain purchases of beef are interrelated. During the early part of the period, when beef prices were rising, and rising relative to prices of other meats, the index of price specializing on beef dropped sharply and beef purchases by chains dropped along with it. As beef prices leveled off in May and June, more price specializing on beef appeared, and chain purchases of beef also increased. As the level of beef prices increased more in the latter half of July, group 1 chains virtually stopped specializing beef. In August, however, most of these chains scheduled one or two specials on beef despite the fact that beef prices had not dropped appreciably. Again, a high degree of uniformity among the chains was observed in the scheduling of specials.

The correlation between the price specializing index and the index of chain purchases is not high for several reasons. ^{25/} The chains usually purchase beef for specials a week and sometimes 2 weeks in advance of the sale. Also, beef inventories of chains vary to some extent. The beef aging program of chain A on ribs and loins is another factor. By buying heavily at about the same time as other chains, chain A apparently can frequently schedule specials on aged ribs and loins when few of the other chains are in position to compete with specials of their own. Nevertheless, underlying associations between the two series are evident (fig. 12).

Among additional factors that might have influenced variations in volumes of carcass beef purchased by chains are: (1) Variations in their purchases of wholesale cuts, and (2) reactions of the chains to or anticipations of changes in the absolute level of prices, with resulting changes in their inventories. Effects of these additional factors, however, probably were small. Wholesale cuts represented a relatively small percentage of purchases by group 1 chains in 1957. In addition, as wholesale cuts were most frequently purchased to supplement regular carcass purchases in anticipation of a sale or special on beef, the purchase of cuts might have contributed more week-to-week variation in purchases, rather than less. Discussions with packers and with chains concerning inventory variations of chain-owned beef in packers' coolers and data on inventories in chain A's meat warehouse indicate that the chains did not attempt to speculate on beef in anticipation of price changes.

Four separate factors--variations in slaughter, variations in chain purchases, the extent or degree of price specializing on beef, and changes in beef prices relative to prices of other meats--were interrelated to some degree. Which of these were causes and which were effects, however, remains in question. As chains frequently find it necessary to place orders with packers for beef before the animals are slaughtered, it is possible that variation in price specializing and in chain purchases resulted in some of the weekly variations in slaughter, rather than the reverse. This possibility is supported by the finding that price specializing is related to changes in prices of beef relative to

^{25/} The simple correlation coefficient, $R = .20$, indicated that the week-to-week relationship was not statistically significant. The two series would be significantly correlated, however, if adjustments were made, in the timing of specials on aged ribs and loins sold by chain A, for the usual delay between date of purchase and date of sale at retail, if this could be done accurately, and for changes in inventories on which data were not obtained.

prices of other meats, and to the fact that price relationships among the meats are determined on a national basis by overall changes in supply-demand conditions rather than by changes in local slaughter. On the other hand, week-to-week variations in southern California federally inspected slaughter are small compared with similar variations in other principal slaughtering areas of the Nation (table 8). Among these principal slaughtering centers, the structure of the livestock meat industry, species of livestock slaughtered, types and grades of cattle slaughtered, extent to which packers specialize, and nature and characteristics of markets served differ greatly. Comparisons of week-to-week variations in slaughter among these centers, therefore, may not be particularly meaningful. Nevertheless, it appears that week-to-week variations in carcass beef purchases by the chains could not have contributed greatly to the weekly variations in slaughter by southern California packers.

By scheduling more specials on beef when beef prices are relatively low, retailers tend to offset cyclical and seasonal variations in production and in marketings from feedlots. It is possible that the Los Angeles chains also aid the industry by tending to offset shorter term, week-to-week variations in local slaughter. But, whether or not this is true, individual packers are faced with some serious problems in adjusting to (1) week-to-week variations in chain purchases of the magnitude described, and (2) the tendency of chains to act rather uniformly in increasing or decreasing volumes of beef purchased. Although variations in chain purchases corresponded to some extent with variations in slaughter, correlations between the two were low. Chain purchases sometimes rise sharply from one week to the next in the face of little or no increase in slaughter. In addition, an individual packer cannot always vary his slaughter from week to week perfectly with variations in total slaughter for the area. The variations in chain purchases, consequently, produce a high degree of uncertainty among packers and make it more difficult for individual firms, the more highly specialized packers particularly, to achieve cost advantages associated with a high but unvarying volume of slaughter. These and some related problems are described further in a later section of this report (pp. 100-101 and 109-110).

Distribution of Chain Purchases Among Packers

Although most of the large number of packers in the Los Angeles area sell beef to chains, a relatively few account for the bulk of these sales. Whether a few relatively large-volume packers in the area have "captured" a major share of the chain business or whether the initiative in establishing this pattern came largely from the chains is not known. The data show, however, that in sales to chains there is more concentration among the packers than appears on the surface. That fact may also partially explain why there is considerable evidence that, from the standpoints of financial stability and bargaining position, there are many "weak" sellers among the packers in the market.

The distribution of carcass beef purchases by chains among types of suppliers is shown in the channel diagram presented earlier (fig. 7). Distribution of beef purchases by the 10 largest chains, by type of packer, are presented in table 10. Packers were grouped into three classes--three national packers, eight large specialized independent packers, and "other packers." 26/

26/ The eight large independent packers were highly specialized beef slaughterers.

Table 8.--Coefficients of variation in total federally inspected slaughter of beef among 7 principal slaughtering centers, 31 selected weeks, 1957 1/

Reporting district	Monday through Saturday	Monday through Friday
	<u>Coefficients</u>	<u>Coefficients</u>
Denver <u>2/</u>	9.9	10.4
Kansas City <u>3/</u>	11.8	11.0
Los Angeles <u>4/</u>	6.0	5.5
Omaha <u>5/</u>	8.3	7.9
Portland <u>6/</u>	12.0	12.6
St. Louis <u>7/</u>	14.4	12.4
San Francisco <u>8/</u>	8.2	8.0

1/ The basic data were adjusted for trend and seasonal variation. Weeks that included holidays and certain other weeks were excluded.

2/ Excludes data on several plants in Wyoming and Nebraska usually included in the Denver reporting district totals.

3/ Includes both the Kansas City-Nebraska area and the Kansas City-Missouri area.

4/ Includes all of southern California.

5/ Includes several plants in Iowa.

6/ Oregon only.

7/ This district includes some packing plants in both Missouri and Illinois.

8/ Northern California.

The 10 chains purchased about 14 percent of their carcass beef from national packers during the 37-week period of the survey. They obtained 60 percent from the eight large specialized independent packers, and the remainder, 26 percent, from the large number of smaller volume packers. The smaller the chain, the greater was the tendency to purchase Choice grade beef from the larger specialized independent packer group (table 9). Group 2 chains purchased little beef from national packers. All chains purchased higher percentages of their "other beef" than of Choice from the residual "other packer" group, as some of these packers specialized in the handling of cows and lower grade carcasses. Chain A purchased relatively more of its Choice grade carcass beef from smaller volume firms in the "other packer" group than most other chains. The large volume required by this chain, together with the offer and acceptance system of buying, probably accounted for this pattern.

One large independent packer supplies the 10 Los Angeles chains with 16 percent of the Choice grade carcasses purchased and 27 percent of their beef carcass purchases of other grades (table 10). This packer was the principal supplier of both group 1 and group 2 chains.

Several other packers were large-volume suppliers of chains (table 10). The 5 most important packer-suppliers of the 10 chains accounted for more than half of all the carcass beef sold to these chains. They provided group 1A chains with nearly 60 percent of their total beef carcasses.

An even greater concentration of purchases by chains among packers is revealed when the data are arranged to show the average extent of reliance by the chains on one or a few suppliers, whether or not this was the same packer (table 11). On the average, the chains purchased 36 percent of their beef from their most important packer-supplier, 53 percent from their two most important suppliers, and 73 percent from their five most important suppliers. Group 1 chains did not rely upon only a few packers, particularly in buying Choice grade beef, as heavily as did group 2 chains. The average group 1 chain purchased nearly 70 percent of its beef from five packers, but the average group 2 chain purchased nearly all of its beef from this number of packers.

Table 9.--Percentage distributions of Choice grade carcass purchases by chain groups from packers, by type of packer, 37 weeks, Los Angeles, 1957

Chain group	National packers	Large specialized independent packers ^{1/}	Other packers	Total
	Percent	Percent	Percent	Percent
Choice:				
Group 1	16.3	61.3	22.4	100.0
Group 2 .....	.1	72.6	27.3	100.0
All 10 chains ...	15.2	62.1	22.7	100.0
Other grades:				
Group 1	14.1	48.9	37.0	100.0
Group 2 .....	.2	57.5	42.3	100.0
All 10 chains ...	7.9	52.7	39.4	100.0
All grades:				
Group 1	16.1	59.8	24.1	100.0
Group 2 .....	.2	63.6	36.2	100.0
All 10 chains ...	13.9	60.4	25.7	100.0

^{1/} Eight independent packers were principal suppliers of chains in 1957 and were highly specialized beef cattle slaughterers.

Table 10.--Individual packers' shares of chainstore purchases, 37 weeks, Los Angeles, 1957 1/

Chain group	Percentage of carcass purchases supplied by:																	
	Largest supplier			Second largest supplier			Third largest supplier			Fourth largest supplier			Fifth largest supplier			Five largest packers		
	Pct.	Choice:	Other:	Pct.	Choice:	Other:	Pct.	Choice:	Other:	Pct.	Choice:	Other:	Pct.	Choice:	Other:	Pct.	Choice:	Other:
Group 1	13	19	14	12	11	11	10	3	9	7	2	7	53	43	53			
Group 1A	25	23	25	13	11	12	3	---	2	5	---	4	62	41	57			
Group 2	46	37	40	12	8	10	---	---	---	1	---	1	59	45	51			
ALL 10 chains	16	27	18	12	11	6	10	9	2	8	7	1	6	55	44	54		

1/ "Largest" defined as largest volume suppliers of chains.

Table 11.--Percentages of carcass purchases supplied to chains by their largest volume packer suppliers, 37 weeks, Los Angeles, 1957 1/

Chain group	Average percentages of carcass purchases supplied by:														
	1 packer			2 packers			3 packers			4 packers			5 packers		
	Pct.	Choice:	Other:	Pct.	Choice:	Other:	Pct.	Choice:	Other:	Pct.	Choice:	Other:	Pct.	Choice:	Other:
Group 1	26	34	26	47	59	46	56	72	56	63	77	63	68	82	69
Group 1A	33	36	32	60	62	58	70	75	69	78	80	76	83	85	81
Group 2	67	67	66	84	77	81	92	88	90	96	94	95	98	97	98
ALL 10 chains	33	49	36	52	66	53	60	78	62	66	83	68	71	87	73

1/ These are not particular packers but the largest volume suppliers of each chain in each group. For instance, the largest volume packer supplier differed among group 1 chains and these, in turn, differed to some extent from those who were most important for individual chains in group 2. Figures shown are averages for chains included in group.

RETAIL CHAIN PRICES AND MARGINS

Chain retailers' prices and margins are of primary interest because, from the standpoints of both volume of beef handled and prices, these firms are widely recognized as important and influential. Retail sales prices and gross margins on beef of three large chains in Los Angeles and procurement prices of the 10 largest chains in that area are examined in this section of the report. The question of price leadership among the chains in buying is considered, and relationships between procurement prices of the chains and wholesale market news quotations are described.

One of the important factors affecting price differences and relationships on beef are differences in marketing services. Marketing agencies such as packers, wholesalers, or retailers are in the business of selling services. Gross margins, which are differences between buying and selling prices on a particular quantity and quality of product, may be considered as prices or charges for marketing services. Over a relatively long time, changes in margins should reflect changes in services provided or in costs of providing the services. Thus, increased costs of retailers such as those for labor, check cashing, or parking lot facilities in time also should be reflected in their margins. Over time, also, margins are greatly affected by changes in the general level of efficiency with which marketing services are rendered. But, at any particular time, margins on an individual product may have little, if any, relation to costs of providing marketing services. In selling their services, marketing firms frequently cannot be certain at any particular moment that the price (margin) they receive for these services will cover their costs. Within a short period of time, margins depend primarily on the ebb and flow of competition, the supply-demand conditions, the rapidity of change in these conditions, and the marketing services performed.

Retail Selling Prices of Los Angeles Chains

Most Los Angeles chains establish their retail selling prices on a weekly basis. Nearly all have a uniform price policy on meat for their stores; that is, selling prices on meat are the same on any particular day in all the individual stores of a chain, irrespective of size or location. Lists containing prices for each day of the week are made up and distributed to stores. Prices for specials and weekend sales sometimes are distributed in supplemental lists.

Price lists containing both regular and special prices on Choice grade beef were obtained as part of another study of three Los Angeles chains for a 3-year period, 1956-58. These three chains are included in group 1 in this study--chain A and two of the group 1A chains. Prices for individual retail cuts were combined for each chain into daily composite retail carcass prices, using as weights the results of cutting tests from various sources, including the chains themselves, and estimates of trim and shrinkage. Cutting tests provide percentages of the original carcass weight represented by each retail cut. Daily composite prices were combined into weekly average composites for each chain, using as weights estimates of the percentage of the total weekly volume sold each day during the week. A simple average of weekly composites for the individual chains was used as the market average. Prices thus obtained probably represent fairly well the retail sales prices of all Los Angeles chains.

Composite retail selling prices of Choice beef in Los Angeles generally increased during 1956-58 (table 12). They rose from an average of about \$50 per hundredweight (\$0.50 per pound) in the first quarter of 1956 to about \$69 per hundredweight in the second quarter of 1958. Part of this might have represented the influence of inflationary factors, but most of it resulted from reduction throughout the Nation of supplies of slaughter beef and pork. In addition, feedlot supplies of beef in the West dropped more during 1957 and 1958 than in other areas.

Retail prices of the three chains followed the same general pattern, but the data revealed some sharply differing retail pricing policies among the chains. Generally, the regular (nonspecial) prices of each chain remained unchanged for relatively long periods of time, moving up or down in a stairstep fashion, but the chains differed in this respect. Chain E changed its structure of regular prices every 2 or 3 weeks, but A and C altered their regular price structures much less frequently. In late spring of 1956, regular beef prices of chain C remained at one level for 2½ months. Again, in December of that year through February of the next year, when wholesale prices were dropping rapidly, and through the first half of March 1957, when wholesale prices were rising sharply, regular retail prices of this chain remained unchanged for more than 4 months. For chain A, periods of unchanged regular prices averaged about 4 weeks.

The three chains also differed sharply in their policies on beef specials. All tended to special more frequently or to a greater extent when beef prices were low or dropping than when they were high or rising. Chain E scheduled specials more frequently than the others, but the extent or degree of change in price associated with specials was relatively small. The increased frequency of change, in other words, was largely offset by the small size of changes. Consequently, coefficients of variation in weekly average selling prices of chain E were relatively small (table 13). Although chain C changed its structure of prices less frequently than the others, differences between regular and special prices of this chain were largest. Coefficients of variation in weekly average composite prices of this chain, consequently, also were largest. Chain A

Table 12.--Composite retail selling prices of Choice grade beef in 3 Los Angeles chains, per hundredweight, 1956-58

Quarter	1956	1957	1958
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Jan.-Mar.	49.49	55.46	65.67
Apr.-June	51.33	58.79	68.44
July-Sept.	54.74	61.37	65.22
Oct.-Dec.	56.19	59.03	63.35
Annual average ..	52.94	58.59	65.64

appears to have adopted a middle course between these two. Regular prices of chain A were altered and specials were scheduled with moderate frequency, and the degree of price change associated with specials of this chain was moderately large. Prices paid by chains A and C for their beef varied relatively more from week to week than did their composite retail selling prices. Retail selling prices of chain C, however, were the more variable of the two (table 13).

Table 13.--Coefficients of variation from week to week in retail sales prices, 1956-58, and in procurement prices, 1957, of 3 Los Angeles chains

Item	Chain A	Chain C	Chain E	Average
	<u>Coefficients of variation</u>			
<u>Retail prices</u>				
1956	6.2	7.3	5.5	6.3
1957	4.6	6.0	4.9	5.2
1958	5.2	4.2	4.2	4.5
Procurement prices, 1957 ^{1/} ..	5.5	5.7	5.8	5.6

^{1/} Computed from weekly averages of actual prices paid.

The simple average of composite retail Choice grade beef prices for the three chains is shown in figure 13. An average wholesale price for carcasses of 500 to 600 pounds and 600 to 700 pounds, Choice grade beef, also is shown. ^{27/} The two series, as may be observed, have the same general trend and seasonal variations are similar. Even very small changes in wholesale prices appear to be reflected in the composite retail prices. In most instances, changes in the wholesale price precede changes in retail prices by 1 or 2 weeks, but the changes are not consistent in this respect. The changes sometimes occur concurrently. Simple correlation analyses, using lagged and unlagged prices, revealed little if any relation between the two series. Month-to-month changes in wholesale prices, however, explained 48 percent of the monthly variation in retail prices.

Retail prices in one particular period failed to follow the pattern that may be observed for other similar periods. Beginning in October 1956 at about \$40 per hundredweight, wholesale carcass prices dropped precipitously through November and then trended irregularly downward to a low in February of about \$33. Retail prices during this period, however, dropped relatively little compared with periods like the first quarter of 1956, the last quarter of 1957, and the third quarter of 1958. Regular selling prices of each of the three chains remained about unchanged during this period. Reductions in the composite average were brought about mainly by more frequent specials and larger price reductions with specials. Fieldwork on this study was under way at this time, so conditions during the period were observed closely. These conditions are more fully described in following sections of this report (pp. 56-57 and 99-101).

^{27/} Here, as elsewhere in the report, only the lower limits of the reported price ranges were used in calculating average wholesale carcass prices. See footnote 31 for weights used in combining wholesale prices of these two weight ranges.

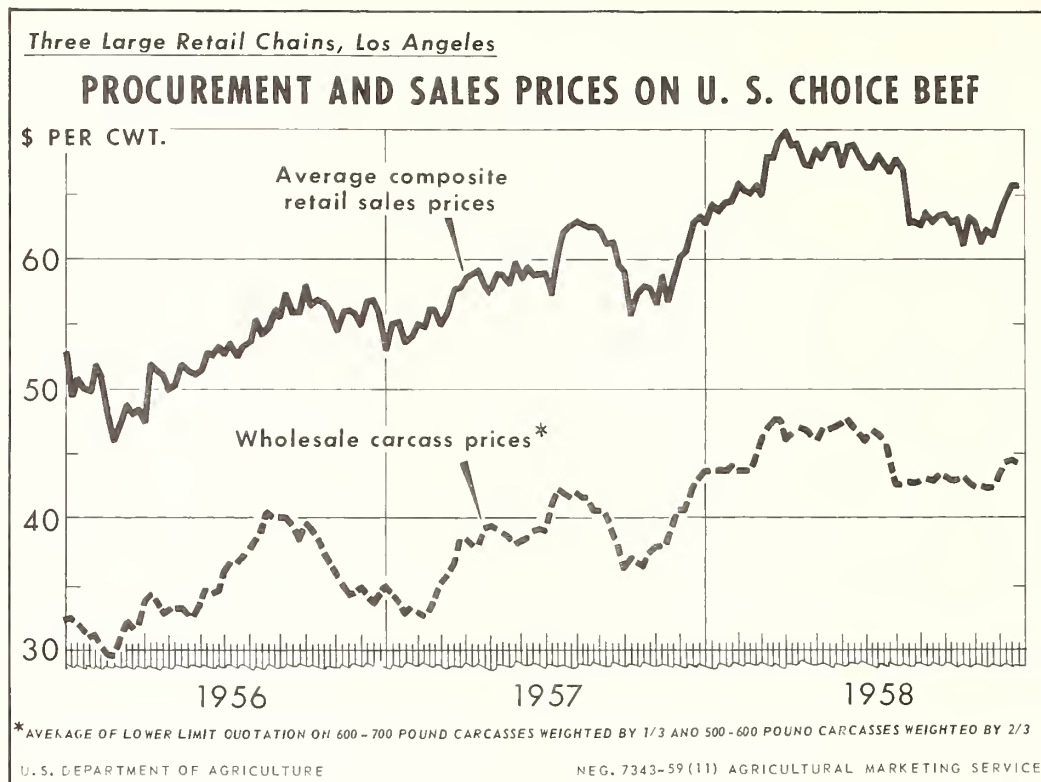


Figure 13

Composite retail prices on Choice beef sold by chains in the North Central and Northeastern regions were computed, using the same methods as described for Los Angeles chains (table 14). Data for these other areas were available for the latter half of 1956 and for 1957 and 1958. Comparisons indicate that retail prices of Choice beef in Los Angeles usually were higher than in either the North Central or the Northeastern region. It might appear that these differences could be explained by differences in wholesale prices paid or in percentages of the carcass sold as higher or lower priced cuts. Closer examination of the data and wholesale prices, however, indicated that differences arising from these sources were small. Differences in trim or shrinkage could not have been responsible, because composite retail prices were adjusted so that allowances for trim and shrinkage were the same for the three areas.

Procurement Prices of the 10 Largest Chains in Los Angeles

The general trend in Los Angeles wholesale beef prices during 37 weeks in 1957 was described earlier (fig. 11). The discussion here will center on (1) price comparisons among the various chains, (2) effects of changes in prices paid by leading chains on prices paid by other chains, and (3) comparisons of these prices to wholesale prices reported by the Federal State Market News Service.

Table 14.--Average composite retail prices per hundredweight (carcass basis) of Choice beef of chains in areas, by quarters, 1956-58

Year and quarter	Los Angeles <u>1/</u>	North Central <u>2/</u>	Northeast <u>3/</u>
	Dollars	Dollars	Dollars
<u>1956</u>			
July-Sept.	54.74	52.88	53.89
Oct.-Dec.	56.19	54.43	55.95
<u>1957</u>			
Jan.-Mar.	55.46	50.94	50.03
Apr.-June	58.79	53.33	52.88
July-Sept.	61.37	56.18	55.84
Oct.-Dec.	59.03	56.91	56.26
Annual average ..	59.59	54.34	53.75
<u>1958</u>			
Jan.-Mar.	65.67	60.39	61.18
Apr.-June	68.44	62.74	65.02
July-Sept.	65.22	62.08	62.09
Oct.-Dec.	63.35	61.56	64.98
Annual average ..	65.64	61.69	63.32

1/ Three chain retailers.

2/ Two divisions of one chain and one division each of four others.

3/ Two chain retailers in the New York City area and one in Washington, D. C.

Price Comparisons Among Chains

Prices paid by chain A for Choice beef were significantly lower than the average of prices paid by the other chains, by about \$.94 per hundredweight (tables 15 and 16). 28/ Average differences in procurement prices on Choice beef between group 1A and group 2 chains were negligible.

With minor exceptions, chain A's procurement prices were significantly lower than those of each of the other chains. One of the exceptions handled a high percentage of heifer beef and the other customarily purchased some ungraded beef at lower prices, which apparently was reported to interviewers as Choice.

Price differences among the chain groups for Choice grade were rather consistent throughout the 37-week period under study, but the relationships changed to some extent with changes in economic conditions (fig. 14).

28/ Table 15 shows average differences, while the statistical significance of differences appears in table 16.

Table 15.--Average prices paid by various retail chain groups for Choice grade beef, period 1, period 2, and entire 37-week period, Los Angeles, 1957 ^{1/}

Chain group	Average price paid		
	Period 1 (Rising prices)	Period 2 (Falling prices)	Average, both periods
	Dol./cwt.	Dol./cwt.	Dol./cwt.
Chain A	37.17	39.19	38.35
Group 1A	38.07	40.17	39.20
Group 2	38.08	39.84	39.04
Groups 1A and 2	38.07	40.12	39.18
All 10 chains ...	37.61	39.60	38.74

^{1/} Period 1--2/18/57 through 6/15/57; period 2--6/17/57 through 11/2/57.

During periods of rapidly rising or falling prices, the price differences between chain A and the other chains narrowed slightly. This indicates that chain A tended to lead price advances and to lag behind general price reductions. Prices paid by group 2 chains also appear to have risen faster than those paid by other chains when prices generally were rising, but they dropped faster when prices were trending downward. Procurement prices of group 2 chains fell below prices paid by chain A during August 1957 when beef prices were dropping rapidly.

The chains did not consistently pay significantly different average prices either for Good or Standard grade beef. Although some paid much higher or lower prices than others during periods of sharply increasing or sharply decreasing prices, they all were within $\frac{1}{2}$ cent per pound of each other in their procurement prices during the periods of relatively stable prices. Some, however, appeared to anticipate price changes more readily than others.

Chain A did not handle Good grade beef and ceased buying the Standard grade just before the sharp uptrend in prices in July. Prices paid by chain A for Standard from March to July were higher than the average of prices paid by other chains in 3 consecutive weeks early in the period when prices were rising rapidly, but, for the entire period to July, prices paid by chain A for Standard grade were not significantly different from those paid by others (fig. 15).

Good grade prices paid by the chains maintained a closer relationship to the Choice prices than did prices for Standard (fig. 15). Variations in the Choice-Standard price differential resulted mainly from changes in the Choice grade prices. Prices paid for Standard rose with prices paid for Good and Choice in the early part of the period, and then remained relatively constant through August and part of September when prices paid for Choice and Good were dropping rapidly. The Standard grade prices were considerably less variable and volatile than prices of either of the other two grades, but, of the three, Good grade prices were most variable (table 17).

Table 16.--Results of analysis of variance tests of differences in average prices paid by 10 Los Angeles chains during 2 periods, February 18-June 10 and June 17-October 21, 1957

Differences 1/	Results of analysis of variance tests 2/	
	Period 1	Period 2
Among weeks	**	**
Among firms	**	**
Group 1 and group 2	n.s.	
Group 1A and group 2 except J :	n.s.	
Group 1A and group 2		*
A and all other	**	**
B and other except A	n.s.	n.s.
C and other except A	n.s.	n.s.
D and other except A	n.s.	n.s.
E and other except A	n.s.	n.s.
F and other except A	n.s.	*
G and other except A	n.s.	n.s.
H and other except A		*
I and other except A	n.s.	n.s.
J and other except A	**	
A and B	**	**
A and C	*	*
A and D	**	*
A and E	*	**
A and F	**	**
A and G	**	n.s.
A and H		n.s.
A and I	**	*
A and J	n.s.	

1/ Group 1 composed of chains A, B, C, D, E, and F. Group 1A composed of chains B, C, D, E, and F. Group 2 composed of chains G, H, I, and J.

2/ ** Highly significant. * Significant. n.s. Not significant.

Inquiry was made into reasons for the lower prices paid by chain A on Choice. As indicated earlier, this chain paid nearly \$1 per hundredweight less than other chains for this grade. Factors responsible for this differential were differences in carcass weights of beef purchased by the chains and differences in marketing services rendered by suppliers. Heavier beef, as shown later, sells in West Coast markets at lower prices than lighter carcasses. The differential between wholesale prices of Choice grade 600-to-700-pound carcasses handled by chain A and 500-to-600-pound carcasses handled by most of the other chains averaged about the same in Los Angeles as in San Francisco and less than in Portland during 1956-58. This means that the difference between prices paid

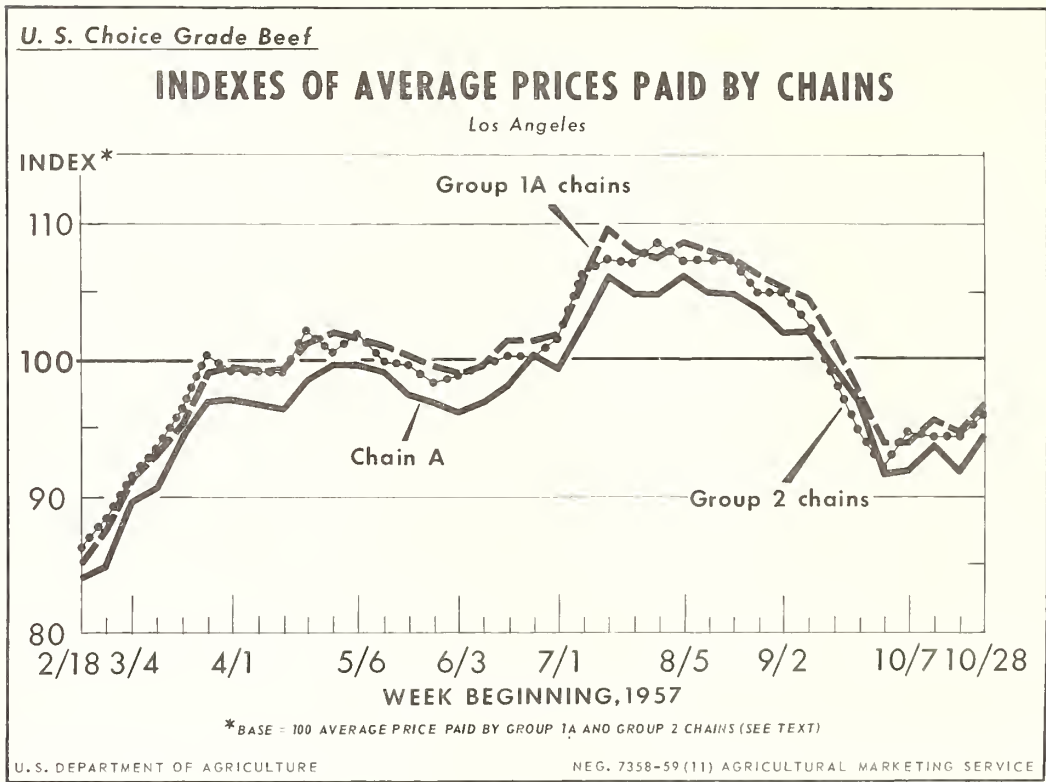


Figure 14

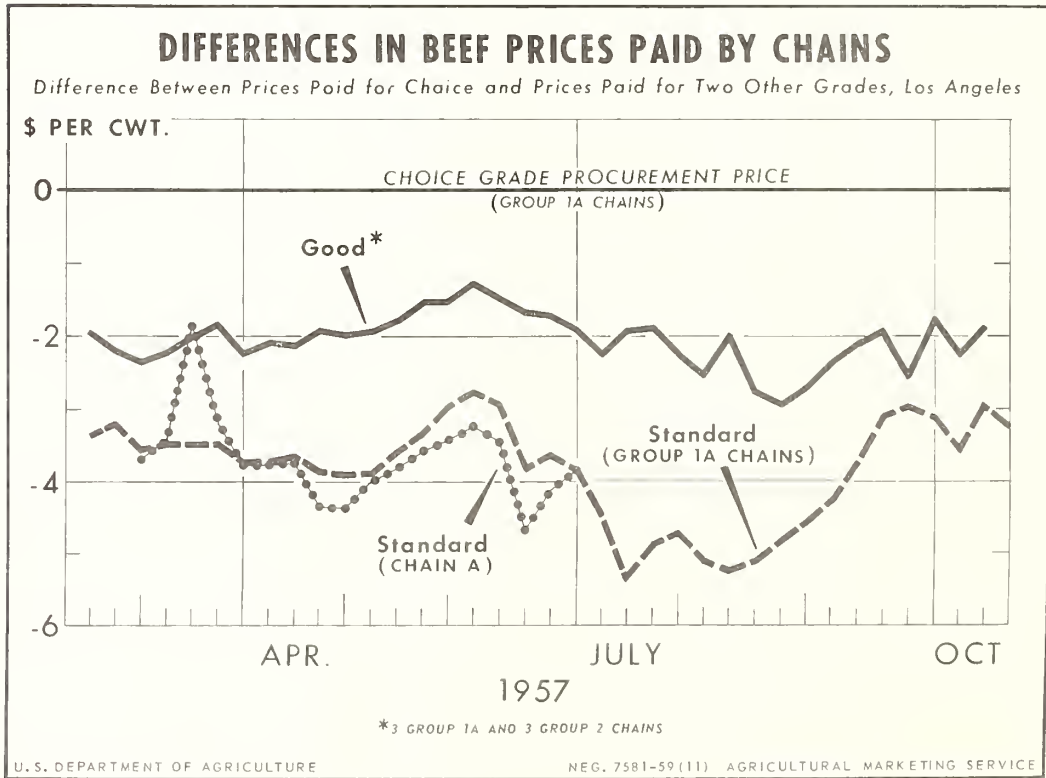


Figure 15

Table 17.--Standard deviations and coefficients of variability in procurement prices, by grade and chain group, Los Angeles, 1957

Group	Standard deviation		
	Choice	Good	Standard
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
A	2.10	<u>1/</u>	0.99
Group 1	2.14	<u>1/</u>	1.71
Group 1A	2.22	2.25	1.72
Group 2	<u>2/</u>	2.08	<u>2/</u>
	Coefficients of variability		
	<u>Coefficient</u>	<u>Coefficient</u>	<u>Coefficient</u>
A	5.50	<u>1/</u>	<u>3/</u>
Group 1	5.54	6.07	4.85
Group 1A	5.68	6.07	4.88
Group 2	---	5.62	<u>2/</u>

- 1/ No purchases of Good grade beef.
- 2/ Few purchases recorded.
- 3/ Purchased Standard grade only during part of year.

by chain A and those paid by other chains might be explained entirely by differences in weights of carcasses purchased. In addition, however, chain A received fewer marketing services from packers than other chains. Beef was delivered in truckload lots to the meat warehouse of chain A rather than directly to individual stores on request, as in the case of other chains. Furthermore, packers provided these other chains with cooler space where their beef was held, usually for about 1 week, until it was delivered to stores. Storage is a necessary marketing service which, in this case, increased packers' total costs of doing business. Also, packers absorbed more shrinkage on carcasses held in their coolers than on beef delivered immediately after sale to chain A's meat warehouse. ^{29/} The cost of the additional services provided by packers to the other chains was conservatively estimated at \$0.25 per hundredweight. This additional cost was not reflected in prices paid by chains receiving the additional services. Instead, there appeared to be some tendency among the chains to establish and maintain a uniform price differential between their procurement prices and the prices paid by chain A, irrespective of differences in types of beef purchased or in services rendered by suppliers.

^{29/} Most of the shrinkage of beef carcasses, however, takes place within 36 hours after slaughter and, therefore, shrinkage costs on sales to the other chains are only slightly larger than on sales to chain A.

Effects of Changes in Buying Prices of One Chain on Buying Prices of Others

In a highly competitive market economy where no single firm controls a major share of the market, changes in buying prices among the firms in the market are likely to correspond fairly closely. No individual firm under these circumstances is likely, consistently, to lead the rest in responding to changes in marketing conditions through changes in their procurement prices. On the other hand, in markets where there are only a relatively few large-volume buyers, and particularly in situations where one firm handles a major share of the product under consideration, price leadership in buying sometimes develops. A price leader does not necessarily dictate price conditions in a market, as this requires almost complete control of available supplies. Instead, actions of other firms, the price followers, often determine whether or not a condition of price leadership exists. The smaller retail chains in a metropolitan area, for instance, might follow the lead of a larger volume firm in bargaining for higher or lower procurement prices mainly because adequate market news data on prices were not available. In this case, the larger firm might remain the price leader in the market despite anything it might do to change these conditions.

In Los Angeles, there are more than a few large-volume buyers, but one or two of these are generally considered to be the leading firms, as they handle larger volumes of meat and other food products than others. Statements were frequently made to interviewers by packers or wholesale distributors indicating that most of the chains in the Los Angeles market followed the price leadership of chain A in buying beef. Consequently, the data obtained in this study were carefully examined to determine whether or not a condition of price leadership existed. Daily modal prices, the most common prices paid by each chain, on consecutive buying days were used for this purpose. Changes in buying prices of each of five group 1 chains were compared with simultaneous changes in buying prices of remaining chains in the sample. These changes were classified as changes "in the same direction," changes "in the opposite direction," and "no change." These "actual" changes were compared with statistically computed distributions referred to as the "expected" patterns (table 18). These expected patterns represent the distributions that would have resulted through chance or accidental changes among the firms in their buying prices (footnote 3, table 18).

Results of the analyses indicate that chain A might have been serving as a procurement price leader on beef in Los Angeles. When chain A's buying price changed, either up or down, from the previous day, buying prices of the other chains moved in the same direction on the same day more frequently than might have been expected on the basis of chance (table 18). The actual pattern for this firm differed significantly from the expected pattern. For firms B and C, the two patterns were so similar that differences could have resulted by chance. Differences between expected and actual patterns for the remaining firms were relatively large, but, in contrast with chain A, procurement price changes by these firms were accompanied less rather than more frequently than expected by changes in prices paid by other chains that were in the same direction.

These results cannot be considered definitive proof of price leadership. Based on data containing unknown degrees of error, covering a relatively short space of time, and only a few of the Los Angeles chains, they must be viewed only as rough indications of such leadership. In addition, the data indicate

Table 18.--Percentage distributions of simultaneous (same day) changes in buying prices of groups of chains, with changes in buying prices of particular chains compared with the statistically expected pattern of response, Choice grade beef, Los Angeles, 1957 1/

Chain for which price changes by other chains are compared and type of change :		Type of price change by other chains on corresponding days to price changes by firm indicated:				Probability <u>2/</u>
		Same direction :	Opposite direction :	No change :	Total :	
		Percent	Percent	Percent	Percent	Percent
A	Actual	36.6	11.9	51.5	100.0	0.03
	Expected <u>3/</u> ..	33.1	19.5	47.4	100.0	
B	Actual	35.3	15.4	49.3	100.0	.97
	Expected <u>3/</u> ..	34.2	17.0	48.8	100.0	
C	Actual	32.2	19.4	48.4	100.0	.86
	Expected <u>3/</u> ..	34.8	16.2	49.0	100.0	
D	Actual	33.7	20.8	45.5	100.0	.61
	Expected <u>3/</u> ..	34.6	15.9	49.5	100.0	
E	Actual	29.3	25.4	45.3	100.0	.17
	Expected <u>3/</u> ..	35.1	15.5	49.4	100.0	
Total						
	Actual	34.4	16.7	48.9	100.0	

1/ In this table, price changes by each of 5 individual firms are compared with price changes by the 9 remaining firms in the sample of 10. Thus, the actual figures for chain A mean that of all observations (243) where a price change, up or down, by chain A was accompanied by action (up, down, or no change) by the other 9 chains from the previous day, 36.6 percent were in the same direction as those made by A, 11.9 percent were in the opposite direction, and 51.5 percent remained unchanged. If a chain did not buy Choice beef the previous day, no observation could be obtained. No comparisons were made for chains F-J as shown for A-E because observations were too few in these cases for valid comparisons.

2/ This is the probability that differences between actual and expected patterns could have occurred through chance; differences for chain B, for instance, could have occurred through chance in 97 cases out of 100. This compares with 3 cases out of 100 for chain A and means that the actual pattern for chain A probably did not occur through chance.

3/ To compare the actual pattern of 1 chain with the average pattern for all 5 is to compare the chain partly with itself. The "expected" here, therefore, is the average pattern for the chains not including the one under consideration.

that chain A was less influential as a price leader, if in fact it was a leader, than was popularly believed by the beef suppliers. Meat buyers of several Los Angeles chains said that they made no attempt to follow at all closely the prices paid by chain A. But, in any event and for reasons mentioned above (p. 50), they do not mean that chain A was intentionally or even consciously acting as a procurement price leader on beef. A firm such as chain A, buying 2 to 3 times as much beef annually as the next largest chain in the market, cannot avoid an influential role in the decisions and actions of suppliers as well as of competing chains.

Relationship of Prices Paid by Chains to Reported Wholesale Market News Prices

Wholesale carcass beef prices in Los Angeles are reported by the Federal-State Market News service by grade and weight classifications. These prices, however, are reported as a range which differs among the weight and grade classes, varies to some extent over time, and usually overlaps, to some degree, another reported range. The range for particular weight groups within each grade usually averages 1 to 2 dollars per hundredweight. With overlapping in price ranges for weight groups, the range for a particular grade tends to average 2 to 4 dollars, although narrower and wider ranges are not uncommon.

The reported price ranges are wide in comparison with price differences among chains or other particular types of buyers. The reason for this is that prices paid by all types of buyers, including independent retailers, are considered in the market news reports. Width of the reported range, however, tends to reduce usefulness of the reported prices to beef buyers unless they know something about the relationships between their procurement prices and the price ranges reported by the Market News Service. To determine some of these, retail chain procurement prices obtained in this study were compared with the wholesale market news quotations for particular weights and grades. Results showed clearly that lower limits of the reported wholesale price quotations on beef in Los Angeles represent bulk sales, that is, sales to large-volume accounts such as retail chains. More specifically:

1. The lower limit of the wholesale price quotation on 500-to-600-pound Choice grade steers was a good indicator of prices paid by group 1A chains. These chains concentrate mainly on 500-to-600-pound carcasses, but the average was toward the top end of this range, indicating that the market news quotations on this weight range might be slightly high.
2. The lower limit of the quotation on 600-to-700-pound Choice grade beef was highly representative of the average price paid by chain A. About one-third of the quoted lower limit prices were slightly higher than the average of prices paid by chain A on the same day, one-third were slightly lower, and one-third were exactly the same. Most of the beef purchased by this chain fell within this weight range and averaged about 650 pounds.
3. Lower limit quotations on 500-to-600-pound Good grade beef were significantly lower than the average of prices paid by six chains for beef of this grade. As weights of most Good grade beef purchased by the chains fall within this weight range, the market news quotations on Good probably were significantly low. The average difference for the period March through October 1957 was

\$0.69 per hundredweight, but the difference rose from about \$0.30 in April to about \$1.40 in August, and then declined. By October, average prices obtained in the study and the lower limit of the quotation were precisely the same.

4. About the same pattern was observed for the Standard grade as for Good. Lower limit quotations on this grade averaged \$0.68 lower than the average of prices paid by the several chains among the 10 largest which were handling this grade.

In late 1958, the Market News Service at Los Angeles began reporting Choice grade prices on 50-pound rather than 100-pound weight groupings. This probably resulted in a more representative pricing situation on the Choice grade at the lower limits. Similar changes in the quotations on the Good and Standard grades might not be feasible. But if the changes could be made, increased care probably should be exercised in determining lower limit quotations on the Good and Standard grades, particularly during the summer. It was clear, however, that (1) the upper limit of the reported range of prices for any grade-weight group does not necessarily represent higher quality beef than the lower limit, and (2) the difference between the highest and lowest prices reported for any grade or weight group is not intended to and does not represent the full range of prices paid by all firms in the market. The upper limit represents sales to small-volume accounts such as independent retailers, and the lower limit represents bulk sales to large-volume accounts.

Chain Retailers' Gross Margins

Gross margins of chain retailers in Los Angeles were computed by using the composite retail prices of three chains described earlier and a weighted average of the closely related wholesale market news prices. ^{30/} The reported market news price used for chain A was the lower limit price reported on 600-to-700-pound Choice beef, while for the others the lower limit price reported on 500-to-600-pound Choice beef was used. ^{31/} Use of the wholesale price quotations permitted calculation of weekly average gross margins of the three chains for the period 1956-58 (fig. 16). The margins for this 3-year period were computed by using concurrent retail and wholesale prices. Several additional series of gross margins were computed, using current retail prices and wholesale prices for 1 week earlier, 2 weeks earlier, and a combination of these.

^{30/} Gross margins as computed here are differences between wholesale prices per pound (carcass basis) and composite retail prices per weight unit (about 0.82 pounds) equivalent to 1 pound at wholesale. Thus, allowance was made for trim, shrink, and other factors affecting the yield of salable meat from a carcass.

^{31/} Lower limit wholesale market news prices for 500-to-600-pound beef were weighted by two-thirds, because procurement prices of two of the three chains corresponded to wholesale market news prices for this weight of beef, while similar prices for 600-to-700-pound beef were weighted by one-third. This procedure appeared justified on the basis of comparisons for 1957 between actual procurement prices of the chains and the lower limit quotations. Gross margins computed on either basis were about the same.

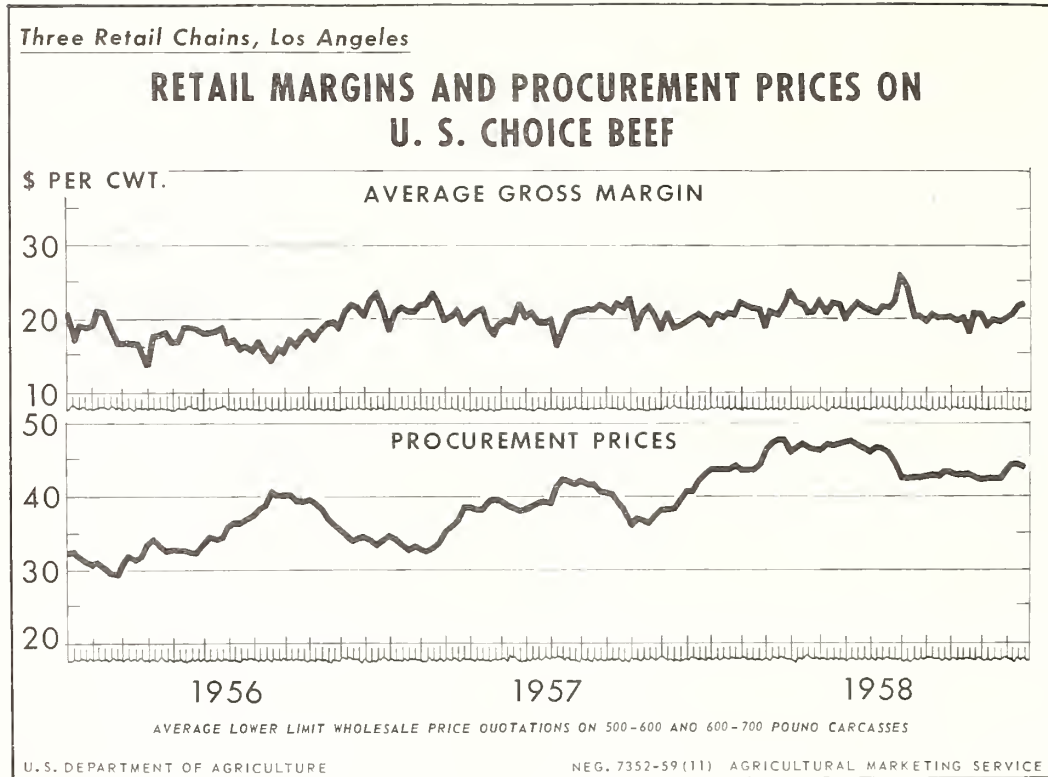


Figure 16

Average gross margins of the three Los Angeles chains on beef tended to rise during 1956-58, but most of the increase took place in the latter half of 1956 (fig. 16). Thereafter they averaged about \$20 per hundredweight. Through most of the period, the gross margins represented 30 percent or more of the average composite retail price (table 19). They averaged 37 percent in the first quarter of 1956, dropped to a low of 29 percent in August of that year, rose to a high of 40 percent in February 1957, remained relatively high in relation to retail prices during the remainder of that year, and dropped to an average of about 32 percent in 1958 as retail selling prices continued to rise.

The lagging procedures employed tended to increase the average level of margins, but they sharply reduced week-to-week variations (tables 19 and 20). The procedure of matching retail prices of chain A with wholesale prices 2 weeks earlier and of using current retail prices with 1 week earlier wholesale prices for the other chains resulted in the smallest increase in the average level of the composite margin and the largest reductions in variation from week to week. The justification for this procedure lies in the operation by chain A of a meat warehouse, the beef aging program of this chain, and the resulting longer average time span involved for chain A between the purchase and sale of beef.

Concurrent margins of chain C tended to vary relatively more from week to week than those of the other chains, while margins of chain E varied least. These differing degrees of variation stemmed mainly from differing degrees of variation in retail selling prices described earlier. Although lagging

procedures substantially reduced week-to-week variations in margins of each chain, they did not change the variation in margins of one chain relative to those of another.

Table 19.--Average margins on beef in 3 chains, by quarters, concurrent and lagged, Los Angeles, 1956-58

Year and quarter	Average margins			
	Concurrent prices		Lagged prices ^{1/}	
	Dollars per hundredweight	Percentage of retail price	Dollars per hundredweight	Percentage of retail price
	Dollars	Percent	Dollars	Percent
<u>1956</u>				
1st quarter	18.18	36.7	18.12	36.8
2nd quarter	17.71	34.5	18.00	35.1
3rd quarter	16.24	30.3	16.65	30.4
4th quarter	20.41	36.3	19.88	35.4
Annual average ...	18.11	34.2	18.13	34.2
<u>1957</u>				
1st quarter	20.97	37.8	21.43	38.6
2nd quarter	19.93	33.9	20.09	34.2
3rd quarter	20.61	33.6	20.45	33.3
4th quarter	20.02	33.9	20.55	34.8
Annual average ...	20.36	34.7	20.58	35.1
<u>1958</u>				
1st quarter	20.72	31.6	21.24	32.3
2nd quarter	21.62	31.6	21.54	31.5
3rd quarter	21.38	32.8	21.03	32.2
4th quarter	20.13	31.8	20.25	32.0
Annual average ...	20.98	32.0	20.99	32.0
3-year average ...	19.82	33.6	19.90	33.6

^{1/} In computing these margins; retail prices were lagged. For Chain A, differences were computed between retail prices in any given week and lower limit wholesale prices on 600-700-pound Choice beef 2 weeks earlier. For the other two chains, retail prices were lagged 1 week before subtracting lower limit prices on 500-600-pound beef. Resulting margins for the 3 chains were averaged.

Table 20.--Coefficients of variation in retail margins of 3 chains,
Los Angeles, 1956-58

Year	Concurrent price basis					Lagged prices 1/
	Chain A	Chain C	Chain E	Composite	Composite	
1956	12.9	15.3	13.8	11.3	9.7	
1957	9.5	12.1	9.2	6.5	5.0	
1958	11.4	11.4	9.7	6.3	5.0	
Average ...	11.3	12.9	10.9	8.0	6.6	

1/ Based on the margins derived by lagging retail prices of Chain A 2 weeks and prices of Chains C and E 1 week.

2/ See footnote 1 to table 7 for an explanation of how coefficients of variation can be used.

Short-term week-to-week and month-to-month variations in chain retailers' margins on beef resulted principally from variations in retail selling prices. In each of the 3 years, variations in these prices explained a significantly higher percentage of the variation in gross margins than did wholesale prices. Another factor is the tendency for the average level of retail prices to remain unchanged for some time after wholesale prices have begun to change seasonally or cyclically, up or down. In the short run, therefore, margins on beef tend to be inversely correlated with wholesale prices. This is clearly indicated for 1956-58 in figure 16. Disregarding trend, chain retailers' gross margins during these years generally were low when wholesale prices were relatively high.

Trends in retailers' margins and prices on beef lead to another general conclusion. Disregarding short-term weekly, monthly, or seasonal variations, it appears that retailers' gross dollar margins on beef are high when both retail and wholesale prices are relatively high and low when these prices are relatively low. If true, this means these relationships between retailers' gross margins on beef and wholesale prices during short-term periods are quite different, actually opposite, from the relationships during longer term periods, and that retailers tend to apply a constant percentage markup to beef. Thus, the relatively low level of gross margins in 1956 may have resulted from the low levels of wholesale and retail prices during the year, despite the fact that the margins were lowest seasonally when wholesale prices were highest.

The low level of retailers' gross margins in the first 3 quarters of 1956 may partly explain the unusual situation in the last quarter of that year and the first quarter of 1957. In this latter period, retailers did not adjust their sales prices downward in accordance with wholesale prices as much as in similar periods, with the result that their margins rose from about \$16 per hundredweight to more than \$22 and from 29 percent of the retail value to

40 percent. Chain retailers may have been attempting during this period to recoup gains lost in the price squeeze of the second and third quarters of 1956 and in the low average levels of both dollar and percentage margins in earlier years. This is the explanation offered by the chain retailers themselves and is the one that, on the basis of available data, appears plausible. Detailed beef margins data supplied by one chain for the period 1954-58 indicate that in 1954 and 1955 Los Angeles chain retailers' margins may have averaged \$10 to \$12 per hundredweight, 20 to 25 percent of the retail value in 1954 and 25 to 30 percent in 1955.

These considerations raise the question, however, why did chain retailers' margins on beef in Los Angeles rise sharply, in both dollar and percentage terms, late in 1956, and remain high throughout 1957 and 1958. There are at least two possible explanations. Hourly wages of retail butchers and other retailing costs had been rising steadily. With anticipations of rising prices, the retailers may have realized that their dollar margins would increase if they applied constant percentage markups, and decided to take this opportunity to adjust their prices and margins even more to reflect the accumulated cost increases.

Several related facts indicate that Los Angeles chain retailers relaxed their price competition on beef after 1956. They apparently had been engaged in a long competitive struggle on beef to attract volume and to draw customers to their stores. Low prices on beef were used as a special attraction, and this may have accounted for the low retail margins during 1954-55. By 1957, however, supplies of broilers had increased, prices had dropped, and quality had improved. Specials on broilers became common as retailers became aware of the advantages of using this product as a special attraction to build store volume. Thus, the critical attention of retailers and the intense competitive struggle may have shifted from beef to broilers during the period under study, permitting retail prices and gross retail margins on beef to rise.

Gross margins also were computed for North Central and Northeastern chain-stores for which retail sales data, described earlier, were available. Methods used in computing these margins were precisely the same as described for Los Angeles, and comparable types of data were used. The average of lower limit wholesale price quotations for the 500-600, 600-700, and 700-800 pound Choice grade weight ranges reported at Chicago by the Market News Service were used as procurement prices of chains in the North Central region. Similar prices on the 600-700 and 700-800 pound Choice grade weight ranges reported at New York were subtracted from the retail sales prices of Northeastern chains. 32/

Margins of Los Angeles chains during most of 1956-58 were considerably higher than those of chains in the other two areas (fig. 17 and table 21). Differences were particularly large in 1956 and 1957. For the 2½-year period for which comparable data were computed, margins of the Los Angeles chains averaged \$19.82 per hundredweight, margins of North Central chains \$16.58, and those of Northeastern retailers \$15.23. In 1958, gross margins for chains in the North Central and Northeastern region trended upward sharply. Although

32/ Although these are not the same weight ranges as used in calculating margins of Los Angeles chain retailers, they probably improve the accuracy of comparisons. These are the weight ranges on which Choice grade prices are reported at Chicago and New York, because heavier beef is used in North Central and Eastern markets than at Los Angeles.

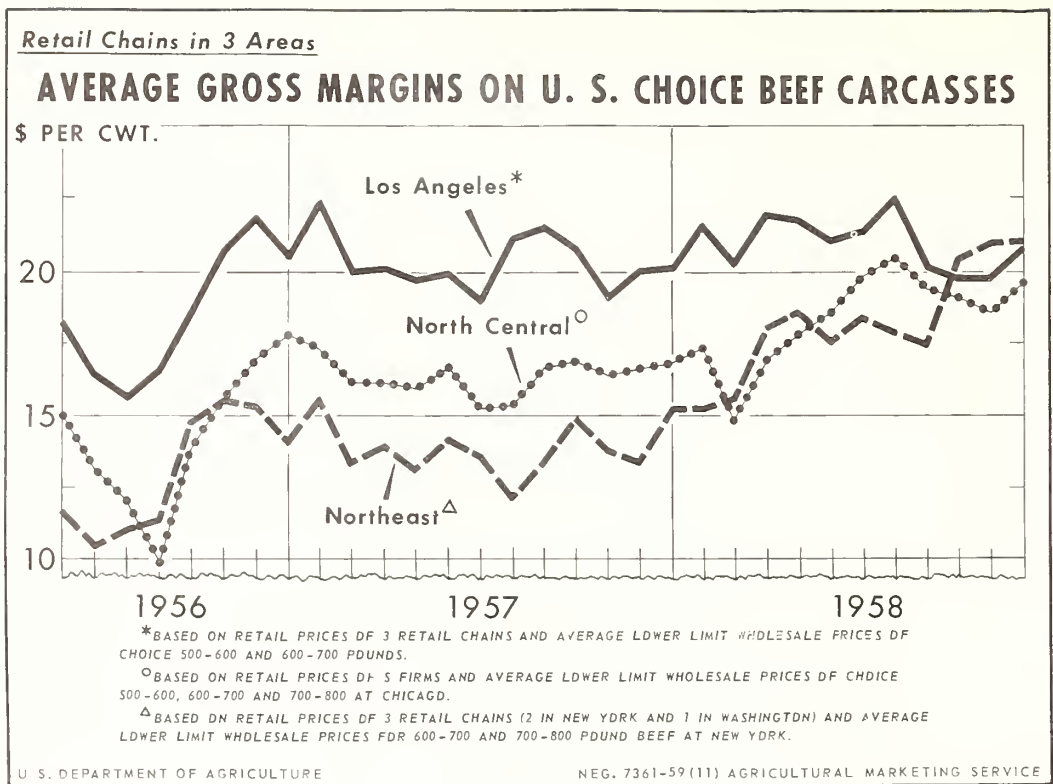


Figure 17

margins for Northeastern chains averaged lowest in each of the 3 years, they increased most in 1958, and in November and December of that year were higher than those of chains in either the North Central or Los Angeles areas. The tendency of the three series of margins to converge adds to confidence in the comparability and reliability of the computations.

In terms of percentages of retail value, as well as in dollars, Los Angeles chain retailer margins were high until late in 1958 (table 21). They averaged 33 percent in June-December 1956 compared with 26 percent or less in the other areas. In the first quarter of 1957, they rose to 38 percent of retail value compared with 29 percent in the Northeast and 34 percent in the North Central region. By the last quarter of 1958, however, percentage margins as well as dollar margins in the three areas were about equal.

There are some possible reasons why margins of Los Angeles chains should average slightly higher than margins of chains in midwestern or eastern areas. Wage rates of retail butchers and other retail store employees probably are higher in the West, and it is possible that consumers in Los Angeles receive more service with their meat in the form of trimming, uniformity, aging, or packaging than in other areas. Also, two of the chains on which data were used in computing Los Angeles margins were local chains, whereas those on which data were employed in calculating margins for other areas were national or regional chains. On the other hand, average store size and sales per store of the Los Angeles firms probably were larger, which would have the effect of reducing costs per unit of beef sold.

Table 21.--Chain retailers' gross margins in dollars per hundredweight and as percentages of the consumer's dollar for Choice grade beef in 3 areas, June 1956-December 1958

Date	Los Angeles		Northeast		North Central	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
<u>1956</u>						
July-Sept.:	16.24	30.3	10.96	20.3	11.74	22.2
Oct.-Dec.:	20.41	36.3	15.19	27.1	15.46	28.4
June-Dec.:	18.32	33.3	12.87	23.9	13.80	26.0
<u>1957</u>						
Jan.-Mar.:	20.97	37.8	14.36	28.7	17.12	33.6
Apr.-June:	19.93	33.9	13.73	26.0	16.30	30.6
July-Sept.:	20.61	33.6	13.02	23.3	15.77	28.1
Oct.-Dec.:	20.02	33.9	14.06	25.0	16.66	29.3
Jan.-Dec.:	20.36	34.7	13.79	25.7	16.46	30.3
<u>1958</u>						
Jan.-Mar.:	20.72	31.6	15.39	25.2	16.34	27.1
Apr.-June:	21.62	31.6	18.05	27.8	17.84	28.4
July-Sept.:	21.38	32.8	17.91	28.8	19.93	32.1
Oct.-Dec.:	20.13	31.8	20.82	32.0	19.12	31.1
Jan.-Dec.:	20.98	32.0	18.05	28.5	18.31	29.7
Average						
June 1956-						
Dec. 1958:	19.82	33.6	15.23	26.5	16.58	29.1

The differences in margins between Los Angeles and the other areas are so large for 1956 and 1957 that considerations such as those mentioned fail to explain them. It is possible that the Los Angeles firms simply led a nationwide readjustment. If so, the possible nature of the adjustment in Los Angeles, described previously, suggests that during the last half of 1956 and until about October 1958, there was significantly less competition on beef in Los Angeles than in some other areas of the Nation.

WHOLESALE CARCASS PRICES

Decisions at the wholesale level traditionally provide the key to pricing and pricing policies throughout the market from producer to consumer. Changes in the supplies of fed cattle and in relative supplies of the various grades largely determine trends in prices at all levels in the market and the general character of seasonal price variations. Supply changes, however, are evaluated most critically and effectively in terms of effects on prices at the wholesale level. The wholesale market is the relay center in the communications system that extends from consumers back through the marketing system to producers. It is at this level that all considerations necessary for decision-making may be most clearly delineated. In addition to changes in local supplies of fed cattle, these include prices and price trends in other markets, in shipments of carcass beef from other slaughtering locations, shrinkage and dressing percentages of cattle, carcass grades, prices of pork, chicken, and other competing meats, the short-term inventory situation of chains and other large-volume buyers, procurement pricing policies and practices of the chains, and others. This does not mean that wholesale prices always are the first to change decisively in one direction or the other. As will be shown, the change depends on economic conditions and the nature of decisions at the wholesale level.

Wholesale Price Comparisons with Chicago and New York

Supply-demand relationships at Los Angeles, as revealed by wholesale price comparisons, have changed markedly in the last decade relative to such relationships in midwestern and eastern markets. Seltzer shows that during 1951-56, wholesale prices of Good and Choice grade steer beef at Chicago rose almost steadily in comparison with similar prices at Los Angeles. ^{33/} This reflects sharp increases in supplies of fed cattle in the Southwest relative to increases in demand for beef in that area and to supplies of fed beef elsewhere. These and other data indicate, however, that wholesale prices at Los Angeles are tied closely to prices and supply-demand conditions in other markets throughout the Nation.

In 1954-56, wholesale prices on all weight classes of Choice grade steer beef at both Chicago and New York frequently were considerably higher than at Los Angeles (fig. 18 and table 22). Differences exceeded transportation costs on beef from Los Angeles to Chicago or New York, indicating that temporary gluts or surpluses had appeared in Los Angeles. In particular weeks, Chicago prices were as much as \$10 higher. The question "how is this possible" arises when it is pointed out that the cost of shipping dressed beef to Chicago from Los Angeles is about 3 cents per pound.

During the two periods indicated, supplies of fed cattle, particularly of the heavy weights, and fed cattle marketings in California and Arizona were unusually large. The cattle feeding industry had been growing rapidly in these and other western States for several years prior to 1955. Despite a consistently high level of marketings from September 1954 through March 1955, numbers on feed in the West on January 1, 1955, were 22 percent larger than on the same date a year earlier, but only a slightly larger number were on feed in the North Central States, as a result of a sharp drop in the drought-affected Plains States. By

^{33/} See publication cited in footnote 9, p. 5.

mid-1956, numbers of cattle in California-Arizona feedlots again were unusually large, and, although marketings from these feedlots were seasonally low at this time, an unusually high level of marketings was anticipated (fig. 19).

Table 22.--Average wholesale market news prices per hundredweight on 600-700-pound Choice grade beef carcasses, lower limit of reported range, Los Angeles, Chicago, and New York, 1954-58

Year and quarter	Los Angeles	Chicago	New York
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
<u>1954</u>			
Jan.-Mar.	37.93	37.84	39.78
Apr.-June	38.99	38.34	39.87
July-Sept.	39.24	39.82	41.86
Oct.-Dec.	38.11	42.50	44.42
Average	38.48	39.62	41.48
<u>1955</u>			
Jan.-Mar.	38.13	42.30	44.29
Apr.-June	37.46	38.63	40.14
July-Sept.	37.10	37.70	40.22
Oct.-Dec.	33.63	35.17	37.07
Average	36.58	38.45	40.43
<u>1956</u>			
Jan.-Mar.	30.44	32.51	34.24
Apr.-June	33.06	33.25	35.36
July-Sept.	37.95	41.27	43.36
Oct.-Dec.	35.30	39.22	41.13
Average	34.19	36.56	38.53
<u>1957</u>			
Jan.-Mar.	33.92	34.12	36.08
Apr.-June	38.28	37.03	39.72
July-Sept.	40.17	40.44	43.29
Oct.-Dec.	38.27	40.20	42.57
Average	37.66	37.95	40.42
<u>1958</u>			
Jan.-Mar.	44.15	44.29	46.42
Apr.-June	46.04	44.93	47.04
July-Sept.	43.10	42.26	44.35
Oct.-Dec.	41.96	42.85	44.81
Average	43.78	43.58	45.66

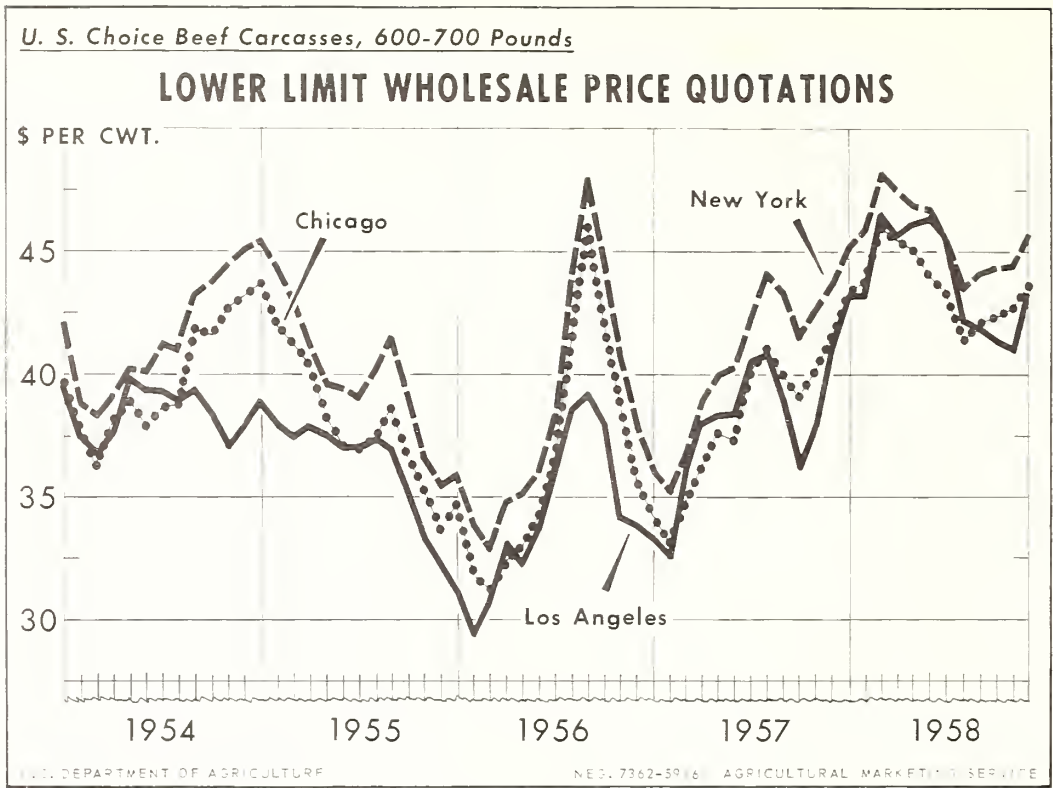


Figure 18

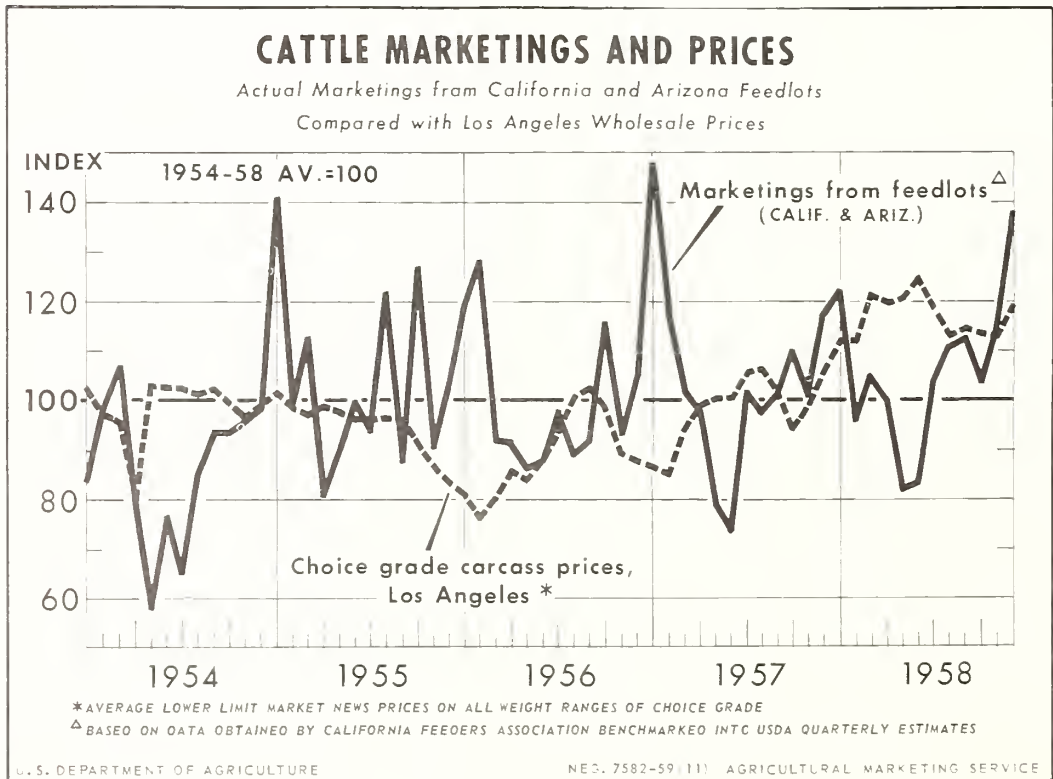


Figure 19

Another reason why wholesale prices remained out of line for so long is that western feeders and packers were unaccustomed to shipping fed cattle or carcass beef eastward. Supply channels from west to east had never been established because, to this period, California was considered a deficit supply area. Nevertheless, in early 1955 and again in late 1956, a few shipments of heavy Choice grade carcass beef were made from Los Angeles to New York.

Wholesale prices of Choice grade beef at Los Angeles, Chicago, and New York corresponded rather closely in 1957-58. The Los Angeles prices frequently were higher during these years than similar prices at Chicago (fig. 18 and table 22). This closer relationship sometimes is attributed to reduction in the amplitude of seasonal variations in marketings from feedlots in the Southwest. As shown before, however, this amplitude was larger in 1957 and 1958 than earlier, relative to the average number marketed each year (fig. 3). Instead, the relative improvement in Los Angeles prices apparently resulted from downward adjustments in the rate of growth in the western cattle feeding industry and reductions in cattle on feed in that area (fig. 19).

Month-to-month variations in the index of California-Arizona feedlot marketing in 1954-58 explained relatively little (about 11 percent) of the month-to-month variation in Los Angeles wholesale prices of Choice grade beef carcasses (fig. 19). These prices, however, were closely correlated with wholesale prices in other markets. These findings indicate that the Los Angeles prices were determined primarily by the same factors that affected prices elsewhere; that is, changes for the Nation as a whole in available supplies of slaughter cattle and of supplies of competing meats, and in incomes, seasonal tastes, and preferences of consumers. In this sense, Los Angeles must be considered a national market for beef.

Wholesale Price Comparisons for Other West Coast Markets

Wholesale beef prices in Los Angeles generally average slightly lower than comparable prices at San Francisco or Portland-Seattle-Tacoma (table 23). In 1957-58, however, price differences on Choice among the three markets were negligible and the pattern of change was closely similar.

The Los Angeles price appears to adjust more quickly than the others to basic changes in supply conditions. During periods of seasonally rising prices in 1957 and 1958, Los Angeles wholesale prices of Choice frequently were above similar prices in the other markets, and when prices were falling, the Los Angeles prices usually were lower than at other markets. Lower limit wholesale prices on Good averaged lower in relation to similar prices at San Francisco and Portland than on Choice. They rarely moved above prices at either of the other two markets.

The close relationship of wholesale carcass prices in the three markets is established through competition among packers in the three markets for fed cattle supplies in the West and the ease with which carcass beef may be shipped from one of the markets to the others. Two important implications of the close relationships are: (1) Wholesale carcass prices in San Francisco and Portland-Seattle-Tacoma bear about the same relationship to Chicago prices as do Los Angeles prices, and (2) it appears difficult for demand conditions, institutional arrangements, or buying practices peculiar to one of the markets to affect wholesale prices in that market very greatly or for very long.

Table 23.--Average wholesale market news prices per hundredweight on 600-700-pound Choice and Good grade beef carcasses, lower limit of reported range, Los Angeles, San Francisco, and Portland-Seattle-Tacoma market, 1956-58

Year and quarter	Los Angeles	San Francisco	Portland-Seattle-Tacoma
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Choice:			
<u>1956</u>			
Jan.-Mar.	30.44	31.37	30.69
Apr.-June	33.06	33.35	32.98
July-Sept.	37.95	38.31	39.33
Oct.-Dec.	35.30	35.84	37.98
Average	34.19	34.74	35.25
<u>1957</u>			
Jan.-Mar.	33.92	34.04	34.87
Apr.-June	38.28	38.46	38.30
July-Sept.	40.17	40.11	40.10
Oct.-Dec.	38.27	38.44	38.64
Average	37.66	37.88	37.99
<u>1958</u>			
Jan.-Mar.	44.15	44.06	44.19
Apr.-June	46.04	46.37	46.04
July-Sept.	43.10	42.83	44.44
Oct.-Dec.	41.96	42.34	44.30
Average	43.78	43.93	44.75
Good:			
<u>1956</u>			
Jan.-Mar.	27.41	28.94	28.04
Apr.-June	29.91	31.23	31.58
July-Sept.	33.60	34.93	37.37
Oct.-Dec.	30.62	31.64	33.49
Average	30.39	31.68	32.62
<u>1957</u>			
Jan.-Mar.	30.63	31.79	31.71
Apr.-June	35.66	36.95	37.37
July-Sept.	36.70	37.41	38.20
Oct.-Dec.	35.85	35.80	36.61
Average	34.71	35.49	35.97
<u>1958</u>			
Jan.-Mar.	41.83	41.98	42.56
Apr.-June	43.23	43.10	44.72
July-Sept.	39.90	40.37	42.85
Oct.-Dec.	40.11	40.75	43.34
Average	41.27	41.55	43.37

Relationships among prices for the three areas, however, differed sharply in 1957 and 1958 from those of earlier years. In 1954-56, wholesale carcass prices in Los Angeles, particularly on lighter weight cattle, frequently were lower than similar prices in San Francisco and in the Portland-Seattle-Tacoma market. In the Northwest, these prices tended to increase seasonally in the fall even though carcass prices in the California markets were trending downward. This resulted in some wide price differentials.

Transportation costs on fresh carcass beef from Los Angeles to San Francisco and Portland are about \$0.91 and \$1.96 per 100 pounds, respectively. ^{34/} Effects of transportation on carcass beef quality might be partially responsible, but basic differences in wholesale market news reporting methods is offered more often as an explanation. However, reasons for differences in the reported prices, in turn, probably could be traced to differences among the markets in structure, competition, and demand for beef. The strong demand for fed Choice grade beef probably grew more rapidly in Los Angeles than in other West Coast areas. Also, there are smaller concentrations of packers and retail food chains in San Francisco and the Northwest and fewer large-volume beef specialists than in Los Angeles. Distinct carlot and mass market outlets probably did not develop in these markets as early as in Los Angeles. Accordingly, the lower limits of price ranges reported at San Francisco and Portland-Seattle-Tacoma probably did not represent these bulk sales exclusively until about 1957. But if differences in structure, competition, and demand were primarily responsible, it appears that these differences are disappearing.

Weight and Grade Price Differentials as Determined
From Wholesale Market News Reports

Additional insights into price relationships among the markets--Los Angeles, San Francisco, Portland-Seattle-Tacoma, Chicago, and New York--may be obtained by considering price differences for particular weight, grade, or grade-and-weight groupings. Table 24 shows price differences associated with weight differences within the Choice, Good, and Standard grades. Here the differences between Chicago and New York, on the one hand, and West Coast markets, on the other, are striking. As determined from market news reports, the lighter beef--500 to 600 pounds--sells in West Coast markets to large-volume buyers for \$1 to \$1.50 per hundredweight more than the heavier 600-to-700-pound beef. Choice 600-to-700-pound carcasses bring \$0.75 to \$1.00 more per hundredweight than 700-to-800-pound carcasses. This indicates a definite preference in West Coast markets for the lighter weight beef. Except for the heavier weight ranges of Choice, Chicago buyers were not willing to pay more or less for heavier than for lighter beef, as different weights sold at the same price to large-volume buyers. In New York, as in Chicago, buyers accepted 700-to-800-pound Choice beef only at a discount, but, within the Good and Standard grades, the New York buyers paid premiums for the heavier weights.

^{34/} These are truck rates on 21,000-pound minimum shipments. Rail rates are significantly lower. The rail rate--\$0.92 (plus \$0.05 for refrigeration) per 100 pounds--can be applied to truck shipments to San Francisco if both the consumer and the consignee are located on a railroad spur. The rail rate to Portland is \$1.19 per hundredweight.

Table 24.--Annual average wholesale price differences per hundredweight on beef between adjacent weight groups within each of 3 grades for 5 market areas 1/

Grade, weight groups compared, and year	Los Angeles	Portland	San Francisco	Chicago	New York
	Dollars	Dollars	Dollars	Dollars	Dollars
Choice					
500/600-600/700					
1956	0.93	0.90	1.87	-0.01	<u>2/</u>
1957 .....	.86	.83	1.48	-.02	<u>2/</u>
1958	1.35	1.00	1.43	0	<u>2/</u>
Choice					
600/700-700/800					
1956 .....	.78	1.13	.94	.71	1.17
1957 .....	.77	.96	.50	.32	.92
1958 .....	.85	.90	.61	.30	.75
Good					
500/600-600/700					
1956	1.49	1.19	1.23	.08	-.51
1957	1.32	.84	.92	0	-.82
1958	1.71	.90	1.58	0	-.49
Standard					
500/600-600/700					
1956	1.57	.25	1.36	0	0
1957	1.36	.28	1.41	0	-.27
1958	1.57	.35	1.11	0	-.26

1/ These are differences between average lower limit wholesale price quotations. The minus signs indicate that the heavier weights sold for more than the lighter.

2/ Prices on Choice grade 500-600-pound beef not reported.

The price differential at Los Angeles between 500-to-600-pound and 600-to-700-pound carcasses averages about \$1.00 per hundredweight on Choice and \$1.50 on Good and Standard. The price differential increases as the grade level drops. The pattern at other West Coast markets is mixed. At Portland-Seattle-Tacoma, the differential is relatively large at about \$1.00 per hundredweight on Good and Choice; the differential is small--about \$0.25 per hundredweight--on Standard. At San Francisco, the price-weight differentials appear largest for Choice at about \$1.50 per hundredweight and smaller at about \$1.00 on Good and Standard. There were no significant or consistent changes in price-weight differentials between 1956 and 1958 as price levels changed.

In table 25, price differentials between grades are compared for particular weight groups. The attempt here is to show price differentials associated only with grade differences. It is recognized, however, that the average weights

within weight groups may differ among the markets and over time. This could affect the price differentials attributed to grade differences. It appears that: (1) Price differentials associated with grade differences, as reported by the market news services, are considerably larger than the price differentials associated with 100-pound weight differences; (2) price differentials between Choice and Good grade carcasses of particular weights are significantly larger at Chicago and New York than at West Coast markets; (3) price differentials associated with grade differences generally were significantly larger in 1956 when the level of prices was low than in 1958 when it was high, which means that wholesale prices during 1956-58 tended to rise more on the lower grades than on the higher grades; (4) the Choice-Good price differential on 600-700-pound carcasses was significantly larger at Los Angeles than at the other two West Coast markets; and (5) price differentials between the Good and Standard grades were significantly smaller at Los Angeles than at the other markets.

Table 25.--Annual average wholesale price differences per hundredweight on beef between grades for particular weight groups and for 5 market areas 1/

Weight group, : grades compared, : and year :	Los Angeles :	Portland :	San Francisco :	Chicago :	New York :
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
600/700					
Choice and Good					
1956	3.81	2.65	3.04	4.63	3.97
1957	3.00	2.00	2.24	3.12	3.08
1958	2.54	1.36	2.34	3.10	2.88
500/600					
Choice and Good					
1956	3.25	2.36	3.68	4.54	<u>2/</u>
1957	2.54	1.99	2.78	3.10	<u>2/</u>
1958	2.18	1.46	2.19	3.10	<u>2/</u>
600/700					
Good and Standard:					
1956	2.15	3.64	3.91	4.12	<u>2/</u>
1957	1.90	3.47	3.54	3.47	<u>2/</u>
1958	2.10	2.26	3.20	1.92	<u>2/</u>
500/600					
Good and Standard:					
1956	2.57	5.69	4.03	5.61	<u>2/</u>
1957	1.86	4.03	3.07	3.47	3.18
1958	2.24	2.81	3.67	1.92	<u>2/</u>

1/ These are differences between average lower limit wholesale price quotations.

2/ Not available.

It appears that either Choice grade prices were relatively high at Los Angeles or the Good grade prices were relatively low. In view of the earlier discussion and an analysis of Good grade prices, the latter appears more probable. The differences probably reflect a relatively stronger demand for Choice and a weaker demand for Good in the Los Angeles market.

Wholesale market news data on beef sometimes have been improperly interpreted. For instance, the absence of differences between lower limit quotations of different weight ranges within each grade at Chicago and certain other markets, as shown in table 24, is interpreted as an effect of grading, by which prices on bulk sales are narrowed to a single point. In effect, it is contended, there are no price differentials within each grade that can be attributed to quality differences. Top-quality Choice beef, it is stated, sells for the same price, or perhaps even less, than low-quality Choice. Some also have expressed concern regarding the price gaps between the highest price reported at Chicago and certain other markets for one grade and the lowest price reported for the next higher grades.

Price differentials among grades change in accordance with changes in supply-demand conditions for one grade relative to another. Thus, in 1956-58, price differentials tended to narrow because slaughter supplies of the lower grades increased during this period relative to supplies of the higher grades. Furthermore, the market news services do not attempt to report the full range of prices for each grade. The reported range itself tends to reflect differences in services rather than differences in quality. Therefore, (1) price gaps, if they exist at all, usually are not as wide as indicated, (2) the average price differentials between grades usually reflect supply-demand conditions among the grades rather well, and (3) the price range for a grade cannot be used as a measure of price differentials associated with differences in within-grade quality. In addition, supplementary data obtained in this study indicate that the prices as reported may not accurately reflect price differentials associated with weight.

Analyses of Experimental Wholesale Price Data

The data collected from packers' coolers in the spring and fall of 1957 on about 3,000 carcasses provide the basis for delineating factors responsible for wholesale price differences on beef, for determining relationships among these factors, and for measuring their separate effects on prices. Three periods of relative price stability were delineated. Spring periods I and II were $1\frac{1}{2}$ -week periods in March and early April, and the fall period covered $2\frac{1}{2}$ weeks in November. In the following discussion, however, it should be remembered that all prices mentioned are for sales by packers.

Factors that appeared to have an important influence on price and for which measurements could be made were grades, within-grade quality differences, buyer types, and carcass weights. In addition, price differences among the three periods were important, and these differences were taken into consideration. Some of the analyses required simultaneous consideration of all of these factors.

In the "overall analysis" (of variance) that will be referred to repeatedly, weighted average prices were computed for 90 subclassifications of the data for each of the three time periods. There were five types of buyers, and within

each buyer-type classification, prices were divided into 18 grade-weight classes. The 18 classes were the 9 one-third-grade classifications, 3 each for Standard, Good, and Choice, which were divided into "high" and "low" weight groups. The dividing line between high and low weights differed by grade. It was 650 pounds for Choice, 600 pounds for Good, and 550 pounds for Standard. Thus, within each buyer-type classification, such as chains, and for each one-third grade, such as low Choice, two average prices, one representing sales of heavy carcasses and one representing prices of lighter weight carcasses, were computed. Price relationships among all of these cells or subclasses were then analyzed.

Price Distributions and Differences by Grade

Los Angeles packers' sales prices on each of the grades were distributed normally in the shape of a bell (fig. 20). The higher the grade the higher were the average and modal prices, but it is clear that there was considerable overlapping. ^{35/} Some Standard grade carcasses sold at higher prices than most Good and some Choice grade beef. Some Good grade beef was sold at prices as high as or higher than any Choice grade beef. Some Choice beef, in turn, was sold at prices lower than the modal price for the Good grade.

The price distributions by grade tend to widen or narrow or to bunch or shift further apart with changes in supply or demand forces operating in the market. In the spring II period, for instance, it appears that prices of the Choice and Standard grades had increased from the spring I period relative to Good grade prices. Nevertheless, price-increasing forces were at work on Good, as the price distribution for this grade had become badly skewed to the higher prices. Parenthetically, this introduces a serious problem for the wholesale market news reporter: Which of the prices should be reported as upper and lower limits to his range?

Variations over time, price differences among types of buyers, and other factors, as well as grade, affect the price distributions shown in figure 20. However, average prices by grade were provided by the overall analysis from which the effects of all factors other than grade had been eliminated (table 26). Results show that the price differentials associated strictly with grade differences were relatively large, averaging \$1.39 per hundredweight between Choice and Good and \$1.73 between Good and Standard. These differentials varied over time for the reasons explained in connection with the frequency distributions.

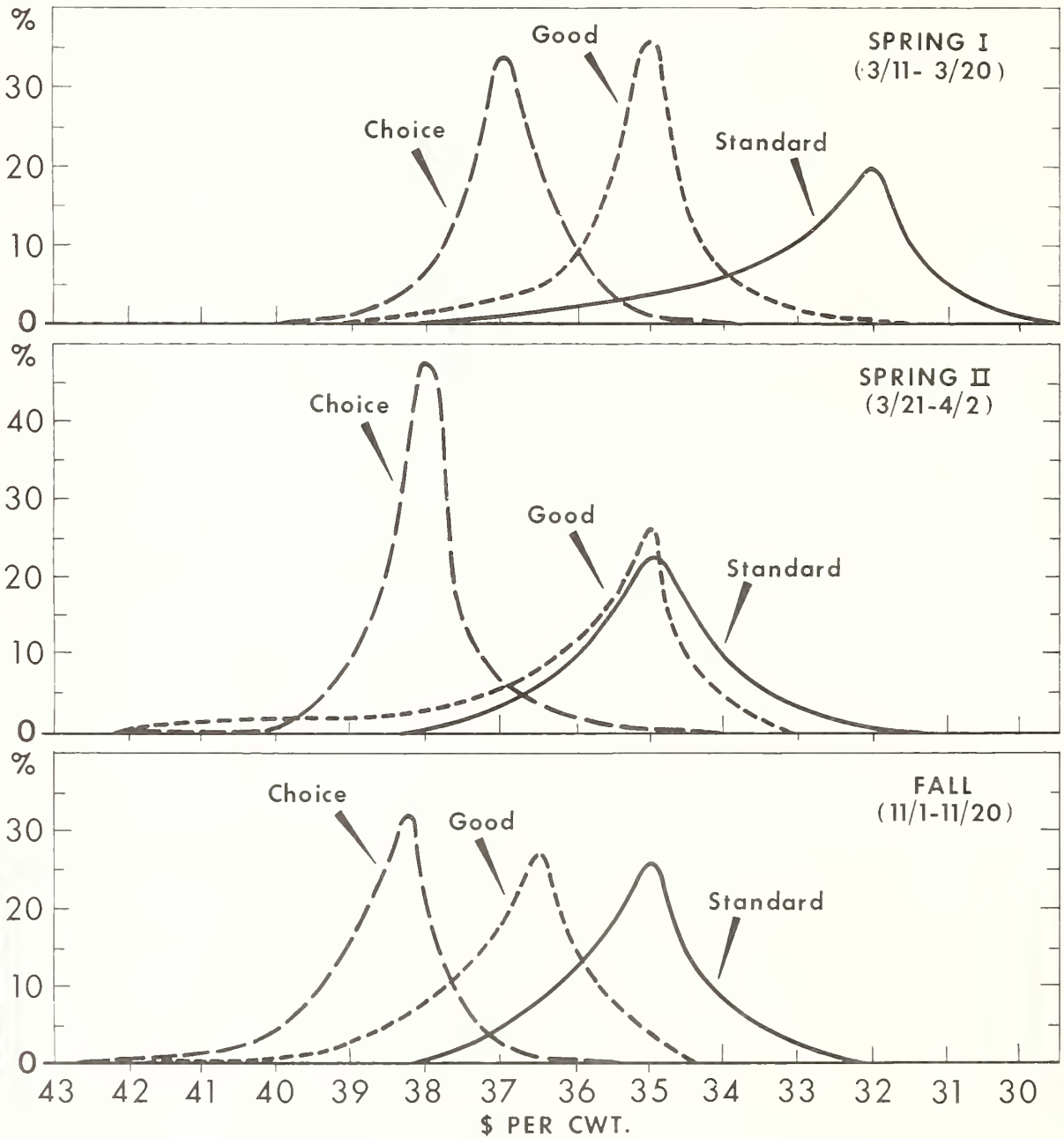
Wholesale Prices by Grade and Type of Buyer

The type of buyer, according to the data, is an important source of variation in wholesale prices of beef in Los Angeles. Modal prices of independent retailers and chains on Choice and on other grades frequently were about the same, but the range of prices paid by the chains was much smaller (fig. 21). Price distributions by type of buyer tended to be skewed toward the higher prices, especially for independent retailers. Modal prices of jobbers and wholesalers on Choice averaged about \$1 per hundredweight less than modal prices of chains and independent retailers in the spring periods, but in the fall they were about \$2 under the modal price of independent retailers. Wholesalers' and

^{35/} A mode or modal price is the most common price received. Thus, the modal price in the diagrams is represented by the peaks of the price distributions.

BEEF PRICE DISTRIBUTIONS BY GRADE

Los Angeles



1957 DATA

U. S. DEPARTMENT OF AGRICULTURE

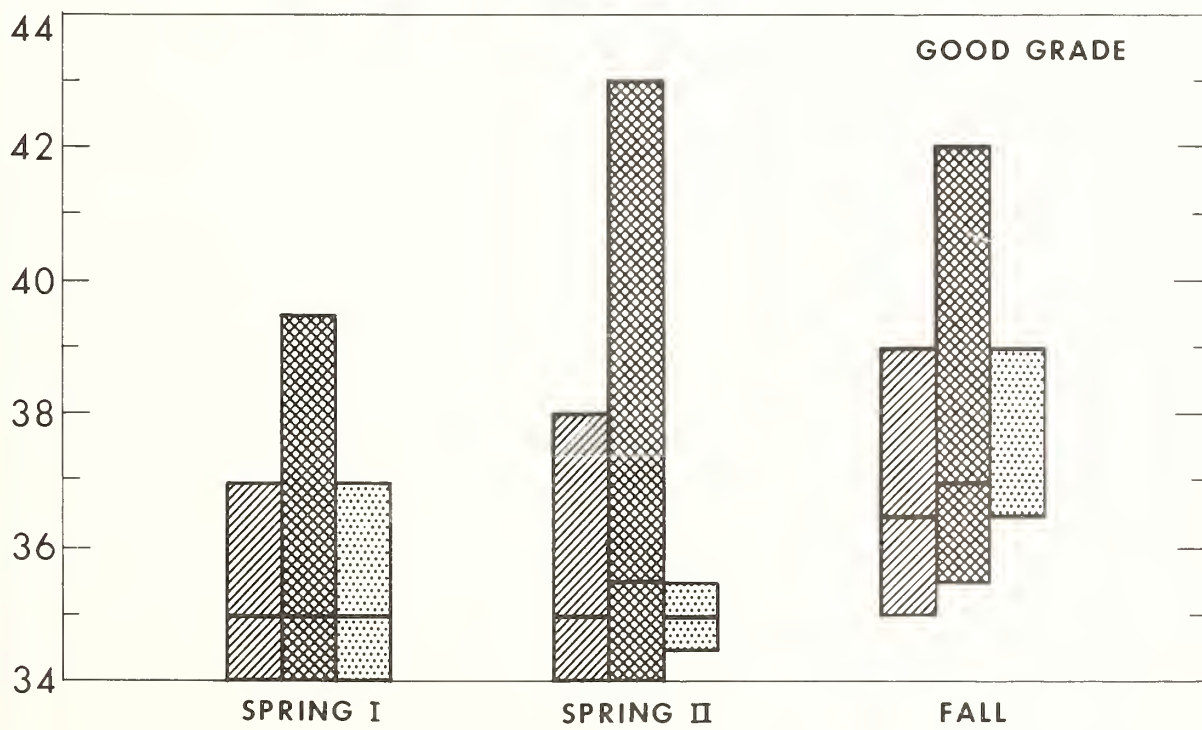
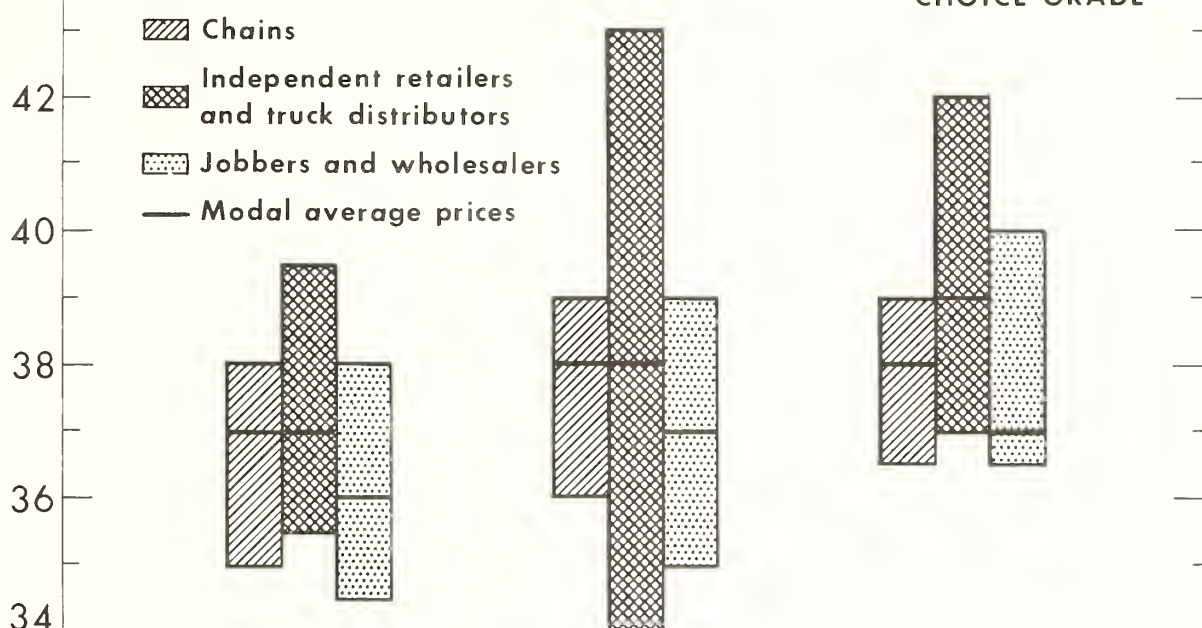
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Figure 20

RANGE OF PRICES PAID AND MODAL AVERAGES

By Types of Buyers, Los Angeles

\$ PER CWT.



1957 DATA

Figure 21

Table 26.--Weighted average prices and price differences per hundredweight, by grade, for 3 periods and combined, Los Angeles, 1957 1/ 2/

Grade	Spring I	Spring II	Fall	All time periods
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Average prices				
Choice	36.99	37.90	38.53	37.90
Good	35.17	36.62	37.40	36.51
Standard	33.93	34.74	35.40	34.78
Average all grades				
Average all grades ..	36.29	37.34	38.01	37.31
Price differences				
Choice - Good	-1.82	1.28	-1.13	-1.39
Good - Standard	-1.24	1.88	-2.00	-1.73

1/ These average prices have been orthogonally balanced to eliminate the effect of all factors under consideration other than those indicated here.

2/ Spring I covered the period 3/11/57 through 3/20/57, or 8 days excluding Saturday and Sunday; Spring II covered the period 3/21/57 through 4/2/57, or 9 days excluding Saturday and Sunday; the Fall period covered 11/4/57 through 11/20/57, or 13 days excluding Saturday and Sunday.

jobbers' modal prices on Good were not more than \$0.50 lower than the mode for chains. The wholesalers and jobbers purchased Good grade beef within a narrower range of prices than other buyers, and their price range on Good was smaller than on Choice. Prices paid by independent retailers for Good covered a wider range than for Choice and were skewed more toward the higher prices.

On the average, independent retailers and truck distributors paid higher prices for their beef than other types of buyers, when average prices paid by the various types of buyers were balanced and weighted in such a way as to eliminate the effects of all factors other than type of buyer (tables 27 and 28). Independent retailers paid \$0.91 per hundredweight more than chains, \$0.68 more than truck distributors, \$1.77 more than jobbers, and \$1.45 more than wholesalers. Other types of buyers, in order of the magnitude of prices paid, were truck distributors, chains, wholesalers, and jobbers.

Independent retailers paid higher prices for each grade principally because of the low average value of their purchases and the higher cost of the services required by them per unit of beef purchased. They paid relatively more for Standard than for Choice or Good, and relatively more for Choice than for Good, probably because the chains were principally interested in Choice and Standard.

Table 27.--Weighted average prices and price differences per hundredweight of carcass beef, by type of buyer, for each of 3 periods and combined, Los Angeles, 1957 1/ 2/

Buyer	Spring I	Spring II	Fall	All time periods
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
	Average prices			
(1) Chains	36.08	37.22	37.78	37.11
(2) Independent retailers:	36.90	38.26	38.70	38.02
(3) Truck distributors ..	36.41	36.55	38.34	37.34
(4) Jobbers	35.88	35.20	36.98	36.25
(5) Wholesalers	35.47	36.94	37.17	36.57
Total average	36.29	37.34	38.01	37.31
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
	Price differences <u>3/</u>			
Chains	---	-0.91	-0.23	0.86
Independent retailers ...:			.68	1.77
Truck distributors			1.09	.77
Jobbers				- .32
Wholesalers				---

1/ Orthogonally balanced to eliminate the influence of grades and factors other than type of buyer.

2/ See footnote 2, table 26, for definitions of Spring I, Spring II, and Fall.

3/ Price of group at left minus price of group at top.

The truck distributors tended to pay higher prices than the chains for each of the grades for two principal reasons: (1) Many selected the higher quality beef within grade, and (2) the truck distributor frequently was a larger volume buyer than the independent retailer and required fewer services. Truck distributors buy when the attentions of salesmen are not required by other types of buyers, and pick up their meat in their own trucks at the packer's plant. Jobbers, on the other hand, sometimes find it difficult to buy directly from packers because they frequently require much service and apparently pay lower prices than the larger volume wholesalers (table 27). The wholesalers are volume buyers of beef in each grade not preferred or strongly desired by truck

Table 28.--Weighted averages of prices paid per hundredweight for carcass beef, by grade, and average differences between prices paid by chains and other types of buyers, 3 periods in 1957, Los Angeles, 1957 ^{1/} _{2/}

Grade	Retail food chains	Independent retailers	Truck distributors	Wholesalers	Jobbers
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
	Average prices				
Choice	37.77	38.45	38.01	37.04	36.90
Good	36.12	37.63	36.34	35.96	35.33
Standard	34.61	35.38	34.74	34.38	33.70
Overall average:	37.11	38.02	37.34	36.57	36.25
	Price differences				
Choice	0	0.68	0.24	-0.73	-0.87
Good	0	1.51	.22	- .16	- .79
Standard	0	.77	.13	- .23	- .91
Overall average:	0	.91	.23	- .54	- .86

^{1/} Orthogonally balanced to eliminate the influence of all factors under consideration other than grade and type of buyer.

^{2/} Includes Spring I, Spring II, and Fall, defined in footnote 2, table 26.

distributors and the retail food chains. Although wholesalers bought Choice grade beef at about \$0.75 per hundredweight below the price paid by the chains, they paid only about \$0.16 per hundredweight less for Good grade beef. They can afford to pay a relatively higher price for Good than for Choice because most of the Good grade beef in the market is relatively high in quality for the grade and some of the wholesale cuts from this beef will grade Choice and can be sold by them at the Choice grade price. For this reason also, there is a strong demand among some retailers for top Good.

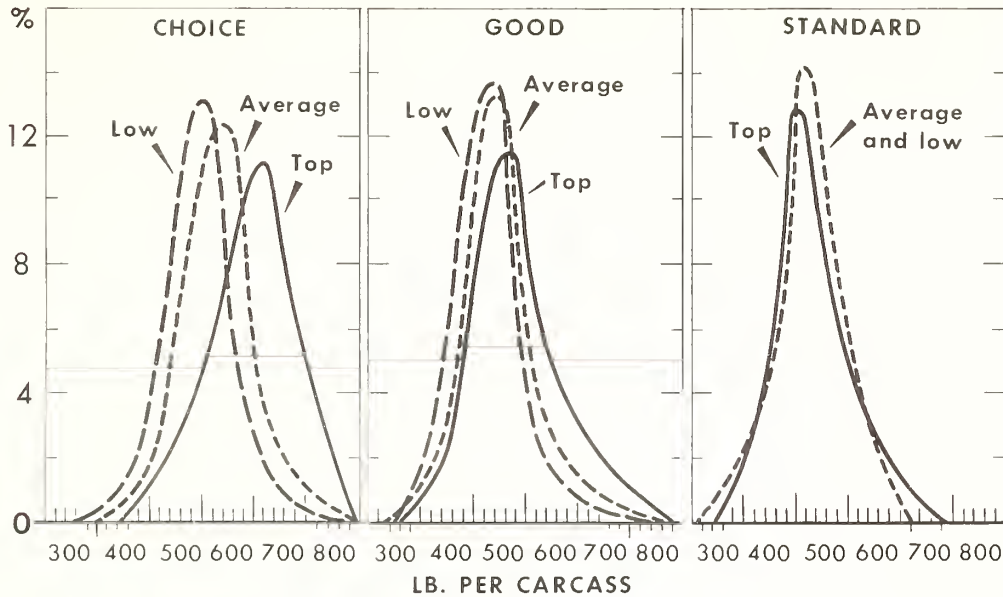
Carcass Weight and Within-Grade Quality Differences

Whole grade differences and differences among types of buyers apparently affect wholesale carcass prices of beef significantly. Before describing effects of two additional factors--carcass weight and within-grade quality differences--relationships between these two factors must be treated.

Within the Choice and Good grades, carcass weight and within-grade quality are positively correlated (fig. 22); that is, the higher quality carcasses are

BEEF WEIGHT DISTRIBUTION BY GRADES SUBDIVIDED IN THIRDS

Los Angeles



DATA OBTAINED FROM SAMPLES IN PACKERS' COOLERS, SPRING AND FALL 1957

U.S. DEPARTMENT OF AGRICULTURE

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Figure 22

likely to be heavier. For instance, top Choice carcasses in the sample averaged 667 pounds compared with 637 pounds for average Choice and 604 pounds for low Choice (table 29). The same type of relationship at a lower level of weight existed within the Good grade. Furthermore, the relationships were consistent among type-of-buyer classifications (table 29). Within the Standard grade, it appears that top-quality carcasses were slightly heavier than average and low-quality carcasses. Relatively few average and low Standard carcasses, however, were included in the sample, and perhaps they were not highly representative. Average weight differences among one-third-grade classes in the Standard grade were not statistically significant.

Although relationships between carcass weight and within-grade quality were significant and consistent among types of buyers, these two factors were not highly interrelated. Among retailers, for instance, an increase of one-third grade in quality of carcasses purchased was associated with an increase of only about 22 pounds in carcass weight. This was small in comparison with the range of carcass weights found within each one-third-grade classification.

Procurement Prices and Carcass Weight Differences

Price differences associated with carcass weight differences, as revealed by data obtained in this study, were significantly smaller than indicated in the Los Angeles wholesale market news reports. ^{36/} For instance, the data from

^{36/} Price differences by weight classes derived from the wholesale market news reports are shown in table 24.

Table 29.--Average carcass weights for one-third-grade classifications of Choice and Good grade beef purchased, by type of buyer, 1957

Type of buyer	Choice			Good		
	Top	Average	Low	Top	Average	Low
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Chain	647	624	612	588	553	538
Independent retailer	629	606	565	572	555	517
Wholesaler (breaker)	728	712	700	638	560	537
Jobber	716	712	649	666	585	780
Truck distributor	671	619	572	546	506	492
All buyers	667	637	604	583	548	522

packers show that modal prices paid by chains for carcasses in the 400-500 and 500-600 pound weight ranges were about the same; modal price differences between other adjacent 100-pound weight groups, irrespective of type of buyer, usually did not exceed \$0.50 per hundredweight. Price differences between weight groups within the Good grade were smaller than within Choice, rather than larger as reported by the Market News Service.

Table 30, derived from the overall analysis, presents average prices received by packers for heavier and lighter weight carcasses within each grade and for each of the three time periods. Effects of other factors were eliminated. In all cases, except Standard grade in the Spring II and fall periods, packers received price premiums for lighter weights of beef, but these premiums were relatively small. The largest premiums in the spring periods were for lighter weights of the Standard grade. In the fall period, premiums for lighter weights of Choice were greatest. This seems reasonable in view of the circumstances in 1957. In the spring of that year, when the data were obtained, most of the heavy Choice grade cattle had been marketed and, therefore, prices on these cattle were high in relation to lighter weight animals. Relatively few lightweight Standard steers were being marketed at this time of year by producers because there was an abundance of grass feed. In the fall, relatively large numbers of light Standard grade steers come to market that, from the standpoints of breeding or conformation, are not attractive to feedlot operators. Lightweight Choice steers were so scarce early in the fall, however, that some of the chains were forced to raise their weight specifications temporarily in order to obtain required numbers of carcasses.

The procedure involving the separation of beef within each grade into two weight groups was not considered entirely satisfactory, as this probably tended to understate the effects of weight on prices. Also, it was not certain in the overall analysis that in measuring effects of weight, effects of within-grade quality differences had been removed. Accordingly, additional analyses were made of relationships between carcass weight and price within one-third-grade

Table 30.--Weighted average prices by grade and weight groups, and price differences between weight groups, per hundredweight, 3 periods and combined, Los Angeles, 1957 ^{1/}

Grade	Spring I ^{2/}		Spring II ^{2/}		Fall ^{2/}		All periods	
	Low weight	High weight	Low weight	High weight	Low weight	High weight	Low weight	High weight
Dollars								
Average prices								
Choice	37.03	36.92	37.97	37.78	38.67	38.28	37.98	37.73
Good	35.23	35.08	36.71	36.44	37.45	37.29	36.57	36.39
Standard	34.39	33.06	34.58	35.05	35.26	35.65	34.83	34.68
All grades ..	36.36	36.16	37.40	37.23	38.11	37.83	37.38	37.16
Price differences ^{3/}								
Choice	0.11		0.19		0.39		0.25	
Good .....	.15		.27		.16		.18	
Standard	1.33		-.47		-.39		.15	
All grades ..	.20		.17		.28		.22	

^{1/} Orthogonally balanced to exclude effects of type of buyer and factors under consideration other than whole grade class and weight groups. Additional analysis indicated, however, that effects of differences in quality within grade had not been entirely eliminated.

^{2/} See footnote 2, table 26, for definitions of Spring I, Spring II, and Fall.

^{3/} Positive figures indicate that the average prices of the lower weights were highest and that buyers paid premium prices for these lighter weights.

categories, and these were combined to show aggregate results. Price variations from day to day within each period, as well as differences among the periods, were controlled. Thus, all factors other than price and the variable under consideration were more nearly excluded in these additional analyses than in the overall analyses. This, however, limited the scope of the analysis because, on the more refined basis, there were too few observations within some of the classifications for application of the correlation technique. Analyses of the relationships were possible only for Choice and Good grade carcasses purchased by chains and independent retailers.

Net regression data on weight and price indicated that, on the average, a 100-pound increase in weight of Choice grade carcasses was associated with a

price drop of about \$0.29 per hundredweight (upper right, fig. 23). The weighted average of price differences among weight groups--\$0.28--was about the same (table 31). The regression figures (fig. 23) imply a linear relationship between price and weight in the Choice grade, but the average prices by weight groups (table 31) suggest a curved relationship. Price differences associated with weight apparently were much larger at the lower end of the weight scale than at the upper end. It seems that retailers paid about \$1.00 less for 500-to-550-pound carcasses than for 450-to-500-pound carcasses, but they paid only about \$0.24 less for 700-to-750-pound than for 550-to-600-pound carcasses.

In contrast with their buying of Choice, retailers paid relatively little more for lightweight Good carcasses than for those that were heavier. Regression results, which probably understate the true relationship, show that a price reduction of only \$0.02 per hundredweight takes place with each 100-pound increase in Good grade carcass weight (lower right, fig. 23). Statistical tests indicated that this result was not significant, which means that there may have been no relationship in the Good grade between price and weight. The averages shown in table 31, however, indicate that (1) there was a slight positive relationship, (2) the relationship, in contrast with that for Choice, was essentially linear, and (3) the average price reduction with each 100-pound increase in weight was \$0.14, or about half as large as the average for Choice. According to the averages, (table 31), retailers paid only about \$0.35 per hundredweight more for Good grade 400-to-450-pound carcasses than for those weighing 650-700 pounds.

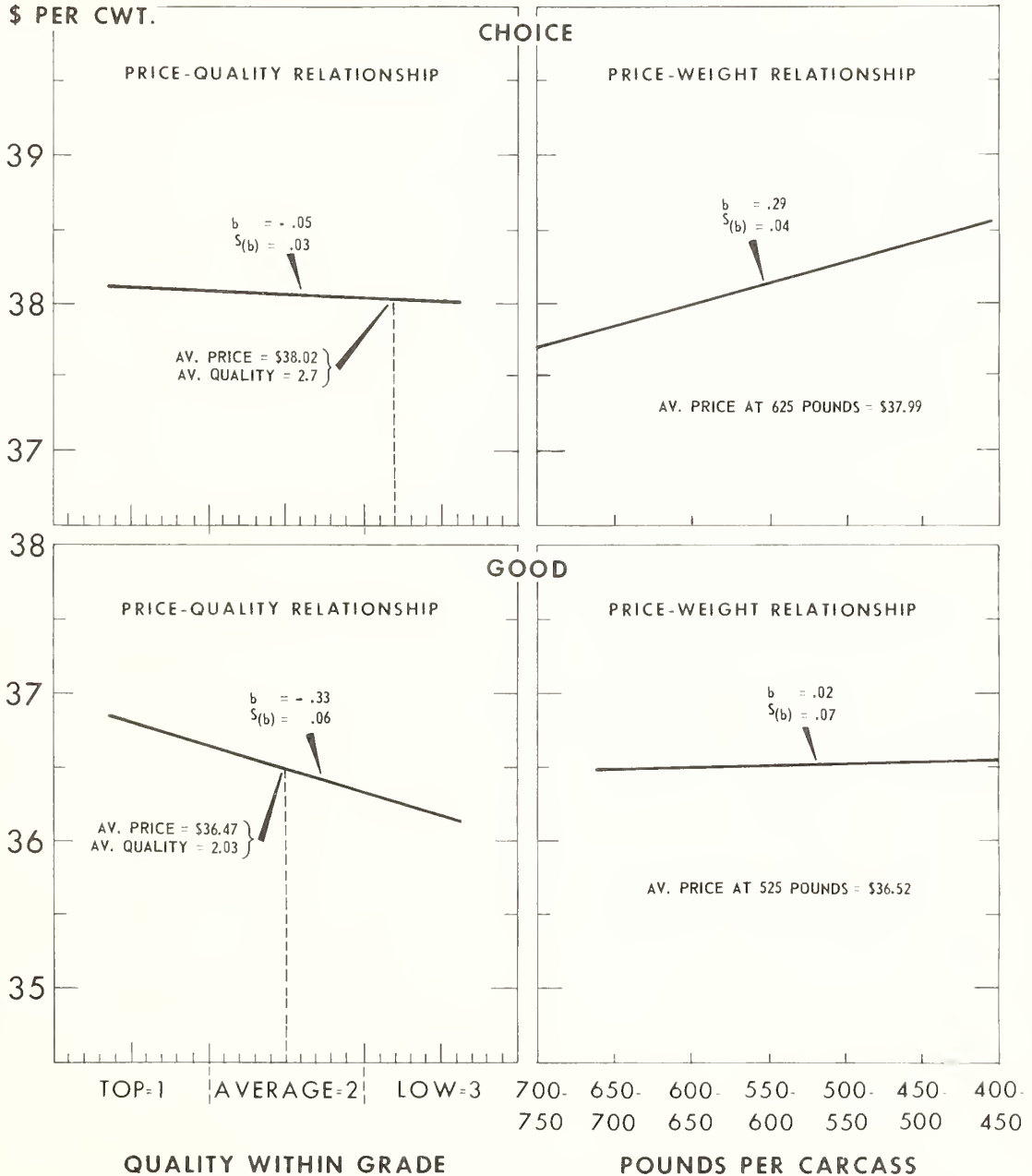
Data for the fall period, as indicated earlier, were more representative in many respects than the spring data. Results using only fall data yielded the same types of results as explained before, but the price-weight relationships were more sharply delineated and all of the relationships were considerably more consistent internally. For the fall of 1957, an increase in the Choice grade of 100 pounds in carcass weight was associated with a drop of about \$0.42 in price per hundredweight (table 31). This compares with about \$0.14 on Choice in the spring and \$0.30 on Good in the fall.

Prices and Within-Grade Quality Differences

Price variations within individual grades that could be attributed to within-grade variations in quality were much smaller than the price variations arising from quality differences between adjacent whole grades. Additional results of the overall analysis, in which effects of factors other than within-grade quality differences were eliminated to the extent possible, are as follows (tables 32 and 33): (1) Carcass beef prices tend to be positively correlated with within-grade differences in quality, that is, each increase of one-third grade in quality within a grade tends to be associated with an increase in prices received by packers; (2) there was a relatively strong relationship in the Good grade between price and within-grade differences in quality, and in the fall period the relationship was strong and well-defined within both the Good and Standard grades; (3) in general, the relationship within Choice appears weak and ill-defined but, in the spring I period, there was a strong positive relationship between price and quality in the Choice grade, and the aggregate result for Choice in the three periods indicates a small but positive relationship; and (4) relationships between price and quality within grades differed considerably among types of buyers (table 33). The chains and wholesale distributors tended to pay slightly higher prices for higher quality beef within grade. Independent retailers, who paid higher prices for lower quality carcasses in the Choice grade,

RELATION OF BEEF WHOLESALE PRICE TO QUALITY AND WEIGHT

Effect of Variations in Quality Within Grade and in Carcass Weight
on Wholesale Price, Los Angeles*



* INCLUDES DATA ON PURCHASES OF RETAILERS ONLY AND FOR SPRING AND FALL 1957 COMBINED. IN EACH CASE ALL RELEVANT FACTORS OTHER THAN THE ONE UNDER CONSIDERATION HAVE BEEN HELD CONSTANT AT AVERAGE VALUES.

Figure 23

Table 31.--Average procurement price differences between 50-pound weight groups of carcass beef bought by
retailers, adjusted for differences in quality between weight groups, Los Angeles, 1957 ^{1/}

	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
	400/450-	450/500-	500/550-	550/600-	600/650-	650/700-	700/750-	750/800-	800/850-	850/900-	900/950-	950/1000-	Weighted average price:	Weighted change per 100 pounds:	Weighted average price of 550-pound class
Season and grade	400/450-	450/500-	500/550-	550/600-	600/650-	650/700-	700/750-	750/800-	800/850-	850/900-	900/950-	950/1000-	Weighted average price:	Weighted change per 100 pounds:	Weighted average price of 550-pound class
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Spring															
Choice	---	---	0.02	-0.19	-0.02	-0.01	-0.14								37.50
Good .....	.17	-0.37	.11	.09	.28	---	.01								35.37
Fall															
Choice	---	-.99	-.41	-.21	-.07	-.01	-.42								38.77
Good	-.22	.31	.49	.10	.63	---	.30								37.41
Spring and fall															
Choice	---	-.99	-.15	-.20	-.04	0	-.28								38.11
Good	-.05	.05	.20	0	.10	---	.14								36.43

^{1/} A negative figure indicates that prices of the lighter of the 2 weight groups averaged higher.

Table 32.--Average price differences per hundredweight of carcass beef received by packers, between grades and within one-third-grade classifications, for each of 3 periods and for all periods, Los Angeles, 1957 ^{1/}

Grade	Spring I ^{2/}	Spring II ^{2/}	Fall ^{2/}	All periods
Price differences between grades				
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Choice-Good	1.82	1.28	1.13	1.39
Good-Standard	1.24	1.88	2.00	1.73
Price differences within grades ^{3/}				
<u>Choice</u>				
Top-Average .....	.05	.20	- .01	.05
Average-Low .....	.15	- .14	- .04	.01
Top-Low .....	.20	.06	- .05	.06
<u>Good</u>				
Top-Average .....	.26	.27	.38	.32
Average-Low .....	.44	1.56	.27	.59
Top-Low .....	.70	1.83	.65	.91
<u>Standard</u>				
Top-Average .....	.60	.31	.56	.52
Average-Low	- .20	- .30	.26	- .01
Top-Low .....	.40	.01	.82	.51
<u>All grades</u>				
Top-Average .....	.15	.23	.13	.16
Average-Low .....	.20	.32	.07	.16
Top-Low .....	.35	.55	.20	.32

^{1/} Orthogonally balanced to eliminate effects of other factors under consideration, but additional analysis indicated that effects of carcass weight had not been entirely eliminated because weight and within-grade quality were found to be interrelated.

^{2/} See footnote 2, table 26, for definitions of Spring I, Spring II, and Fall.

^{3/} Negative figures indicate that the average price of the higher of the two qualities compared was lower.

apparently are the source of the negative relationships on Choice, particularly in the fall period. The fact that independent retailers usually are less informed on grades and beef quality than other types of buyers may have been a factor in this situation. Emphasis on lighter weight beef, as explained later, also may have influenced quality selections of independent retailers.

Table 33.--Average price differences per hundredweight of carcass beef received by packers, between one-third-grade classifications, 3 periods, Los Angeles, 1957 1/ 2/

Type of buyer and grade classes	Choice	Good	Standard	All grades
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Chains:				
Top-Average	0.13	0.33	0.03	0.18
Average-Low .....	.13	.47	.31	.23
Top-Low .....	.26	.80	.34	.41
Independent retailers:				
Top-Average	- .29	.28	1.50	- .01
Average-Low	- .22	- .01	- .71	.08
Top-Low	- .51	.27	.79	.07
Wholesale distributors:				
Top-Average .....	.34	.34	.53	.34
Average-Low	- .04	.37	.10	.09
Top-Average .....	.30	.71	.63	.43
All buyers:				
Top-Average .....	.05	.32	.52	.16
Average-Low .....	.01	.59	- .01	.16
Top-Low .....	.06	.91	.51	.32

1/ Orthogonally balanced to eliminate the effect of other factors under consideration, but additional analysis indicated that effects of carcass weight had not been entirely eliminated because weight and within-grade quality were found to be interrelated.

2/ Negative figures indicate that average price of the higher of the two qualities compared was lower.

Additional analyses were made of relationships between packers' wholesale selling prices and within-grade quality differences, similar to those described for relationships between prices and carcass weights. Correlations were made for retailers, both chain and independent, of relationships between one-third grade classifications and procurement prices within 50-pound carcass weight groupings. These were averaged in a special manner to obtain results shown in the left-hand portion of figure 23. As before, price variations from day to day within periods, as well as price differences among the periods, were controlled and the analyses were restricted to the Good and Choice grades.

For Choice, one-third grade quality differences accounted for a relatively small part (about 1 percent) of the price variation due either to this factor, to weight, or to both (upper left, fig. 23). Price differences that could be attributed to one-third grade differences were not statistically significant, but consistency of the results leads to the conclusion that retailers did tend

to pay slightly higher prices for higher quality Choice than for lower quality Choice. ^{37/} With each one-third grade drop in quality, retailers apparently paid about \$0.05 less per hundredweight, resulting in a total average within-grade price difference of about \$0.15 that could be attributed to quality differences.

The price-quality relationship in the Good grade was distinct and highly significant (lower left, fig. 23). A drop of one-third grade in quality in this grade was associated with a drop of about \$0.33 per hundredweight. This means that (1) retailers paid nearly \$1.00 per hundredweight more for some Good grade carcasses than others, depending strictly on quality within the grade, and (2) they paid significantly more within the Good grade for a one-third grade increase in quality than for a 100-pound drop in weight.

Relative Importance of the Various Factors in Affecting Wholesale Prices

The overall analysis yielded information on the relative importance of between-grade quality differences, type of buyer, weight, one-third grade quality differences, and time, in their effects on wholesale prices of beef. These are summarized in table 34. The total price variation accounted for by these factors and all other factors is represented by 100 percent (col. 5, table 34). As indicated, about 42 percent of this variation stemmed from price differences between whole grades; that is, from differences between weighted average prices of the Standard, Good, and Choice grades. The next most important source of variation was time (average price differences among the three periods) which accounted for nearly 29 percent of the variation. Differences among types of buyers were responsible for nearly 12 percent. Price differences among one-third grade classifications within grades (excluding between-grade comparisons) contributed 2.4 percent, while weight was responsible for less than 1 percent. ^{38/} Only 15 percent of the total price variation was not explained by this analysis. Excluding time and the interaction component, 80 percent of the within-grade price variation was explained by price differences among types of buyers, 16 percent was contributed by one-third grade quality differences, and the remainder--4 percent--was accounted for by price differences between light and heavy carcasses. These percentages relate only to the relative importance of the various factors, and are not indicative of absolute magnitudes of the effects on prices.

The percentages shown in column 5 of table 34 that relate to within-grade price differences are broken down in columns 2, 3, and 4 to show sources of the variation by grade. As indicated, most of the price variation, particularly variation arising from price differences among types of buyers and over time, is accounted for by the Choice and Good grades. Price differences between

^{37/} A series of multiple correlations for Choice and Good, using price as the dependent factor and one-third grade classifications, weight, and time as independent variable, yielded about the same results as described here for each of the different types of buyers.

^{38/} The breakdown between carcass weight and within-grade quality, for reasons explained earlier, probably is not too meaningful. The two-way weight classification probably tends to understate and obscure the effect on prices of variations in carcass weight. Simultaneously, it may tend to overstate the effect of within-grade quality differences on prices.

Table 34.--Percentage distribution of sums of squares obtained from analysis of variance on orthogonally weighted averages, Los Angeles, spring and fall, 1957 1/

Source of variance	Choice	Good	Standard	All 3 grades
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
Price differences between whole grades:	n.a.	n.a.	n.a.	41.7**
Price differences within grades <u>2/</u> :				
Type of buyer	6.2**	9.5**	0.9*	11.9**
Weight .....	.5**	.1	<u>3/</u>	.6**
One-third grade	<u>3/</u>	2.2**	.2	2.4**
Time	15.2**	16.1**	1.6**	28.6**
Interaction <u>4/</u>	3.2	1.4	1.2	14.8
Subtotal	25.1	29.3	3.9	58.3
Total	25.1	29.3	3.9	100.0

n.a. Not applicable.

* Statistically significant at the 5-percent level.

** Statistically significant at the 1-percent level.

1/ The percentages indicate the relative importance of each factor (col. 1) in contributing to price variation.

2/ Except for the subtotal, figures are not supposed to add across to the total column.

3/ Insignificant.

4/ Includes all residual variance, including day-to-day price differences within time periods.

weight groups of the Choice grade contributed nearly all of the variation arising from this source, whereas price differences among one-third grade classifications in the Good grade account for most of the variation arising from within-grade quality differences. Within the Choice grade, it appears that weight has more influence on price than quality. One-third grade differences, however, are considerably more important than weight within the Good and Standard grades.

Some Implications

The data revealed significantly large price differences within grades as well as between grades that could be attributed to quality differences. They were consistent in showing that higher prices are paid at the wholesale level for higher quality. The within-grade price differences associated with quality

undoubtedly were considerably and significantly smaller than the between-grade price-quality differences. However, the data also revealed some logical reasons for this.

Most beef carcasses in Los Angeles are purchased in lots rather than individually. When bought in lots, all carcasses in a lot usually are purchased at one price if all are of one grade, irrespective of within-grade quality or carcass weight. This tends to reduce price variability within a grade and to obscure the true importance of both weight and quality. Also, when packers receive an order for low Choice on which the price has been established, they frequently include some top or average Choice in the shipment if they do not have enough low Choice to fill the order. Another consideration is that relatively few top and average Choice cattle are handled by Los Angeles packers. The numbers may be so few that Choice grade quality variation essentially is reduced to that found within the lower one-third of Choice. In this circumstance, little price variation associated with quality could be expected. Some studies have indicated that there is less quality variation in Choice than in Good or other lower grades. ^{39/} Furthermore, beef carcasses are not officially grade-designated by one-third grade classifications, whereas weights are stamped on individual carcasses. With some confusion or lack of understanding among buyers concerning attributes of quality, this tends to emphasize the weight factor and to deemphasize within-grade differences in quality.

For Choice, weight was more important than quality in explaining price variations, but exactly the reverse was true for the Good grade. Factors mentioned above appear to explain the greater importance of weight in the Choice grade. The greater importance of quality in the Good grade might be explained by (1) the rather even distribution of Good grade beef in the market among one-third grade categories, and (2) the fact that top Good carcasses often yield cuts that either will grade Choice or can be successfully mixed in retail display cases with Choice. Another factor is that, although there is considerable variation in weights of Good grade carcasses, higher percentages of the top and average Good carcasses than of top and average Choice fall within retailers' carcass weight specifications.

A final reason why the between-grade price differences exceed within-grade price differences is that quality and weight tend to offset each other in their effects on price. Weight and quality within a grade, as explained earlier, are positively correlated. In view of the price-quality and price-weight relationships described (fig. 23), this means that a carcass in the top third of a grade may receive a premium for quality and, at the same time, a discount for weight. Alternatively, carcasses in the low third of a grade may be discounted on the basis of quality and, at the same time, receive a premium because they are relatively light in weight. This would tend to (1) reduce the degree of price variation within grades, and (2) obscure the effect of quality variations on price. In addition, buyers apparently will sacrifice quality when buying Choice grade beef before they will depart from their weight specifications. In selecting from among Good grade carcasses, however, they apparently are almost exclusively concerned with quality.

^{39/} See p. 155 of the second publication cited in footnote 1, and Rhodes, James V. and Kiehl, E. R. Predicting Consumers' Acceptance of Beef Loin Steaks, Mo. Expt. Sta. Bul. 651. January 1958.

Although important, carcass weight, according to results of the analysis, had less influence on wholesale carcass prices than indicated by the Los Angeles wholesale market news report. This is true particularly of the Good grade. Price differences attributed by the report to weight, as shown in table 24, actually arise from a variety of sources. These include price differences among large-volume buyers such as chains and wholesalers, among quality categories within a grade, and among weight groups. In attributing the price differences to weight, the report probably tends to increase the use of weight as a selective factor.

The results carry implications regarding the Federal grade standards for beef. One of the principal objectives of grading is to establish grade classifications such that the variation in quality within each grade is less than in the total supply of the product. Using price differences as a measure, this objective appears to have been accomplished. As is well known, however, there remains some quality variation within each of the grades. Conformation, marbling, texture, firmness and color of lean, and maturity, the principal components of the official grade standards, all vary somewhat within each of the grades.

It is frequently assumed, therefore, that these variations should result in larger price differences than those derived, usually improperly, from market news reports or those found in this study. It is clear, however, that the rather small effect of within-grade quality differences on prices cannot be traced to the official grade standards, as such. Instead, this effect must be attributed to the practice of buying in lots rather than individual carcasses, inventory circumstances of packers, the relatively small supply of top and average Choice quality beef in the market, the relatively small degree of actual quality variation in this grade, the overriding influence of carcass weight, and lack of good information on the part of many buyers concerning within-grade quality differences in beef.

The concept of quality underlying the grade standards for beef is not understood alike by all producers, packers, and customers of packers. Although most refer to beef carcasses as "high," "low," or "average" in quality for the grade, it is not always certain that there is general agreement in the trade on definitions of these terms. For instance, some beef buyers in Los Angeles appeared to be referring to carcass weight or thickness of the outside fat covering in these distinctions. But neither carcass weight nor thickness of the outside fat covering is a direct factor in the carcass beef grade standards.

The findings do suggest the possible desirability of a revision in the Federal grade standards for carcass beef. Carcass weight is not directly involved in the Federal beef grade standards, but this factor apparently represents some attributes of beef, in the Choice grade particularly, for which buyers are willing to pay. If this situation is found to exist in all or a majority of the markets, it is possible that the standards for Choice grade would be improved by a revision which would include these attributes.

SLAUGHTER CATTLE PRICES AND PACKERS' SLAUGHTER MARGINS

Slaughter cattle prices also are affected by a wide variety of factors. In general, these are the same factors that influence wholesale prices of beef. ^{40/} Long-term cyclical changes and trends in slaughter cattle prices arise out of cyclical changes and trends in cattle numbers, supplies of red meats, changes in the general level of all prices and costs, changes in consumer incomes, preferences for beef, and other factors. The upward trend in Choice grade cattle prices during 1956-58 (fig. 24) reflects an increasing shortage of feeder and slaughter cattle, cyclically low production of other meats, and some increase in consumer demand for beef. ^{41/}

Shorter term changes in prices of Choice grade slaughter cattle at Los Angeles result mainly from seasonal changes in demand for beef, available supplies of beef relative to supplies of competing meats, and variations in marketings of cattle from feedlots. Month-to-month changes in marketings from California-Arizona feedlots explained only 11 percent of the month-to-month variation in Los Angeles terminal market prices of 900-1,100-pound Choice steers in 1954-56, and 25 percent in 1956-58. Thus, prices of Choice steers and wholesale prices of Choice steer carcasses were influenced to about the same extent by marketings from feedlots. Average slaughter animal prices used in this report are midpoint prices of the price ranges reported by the Market News Service.

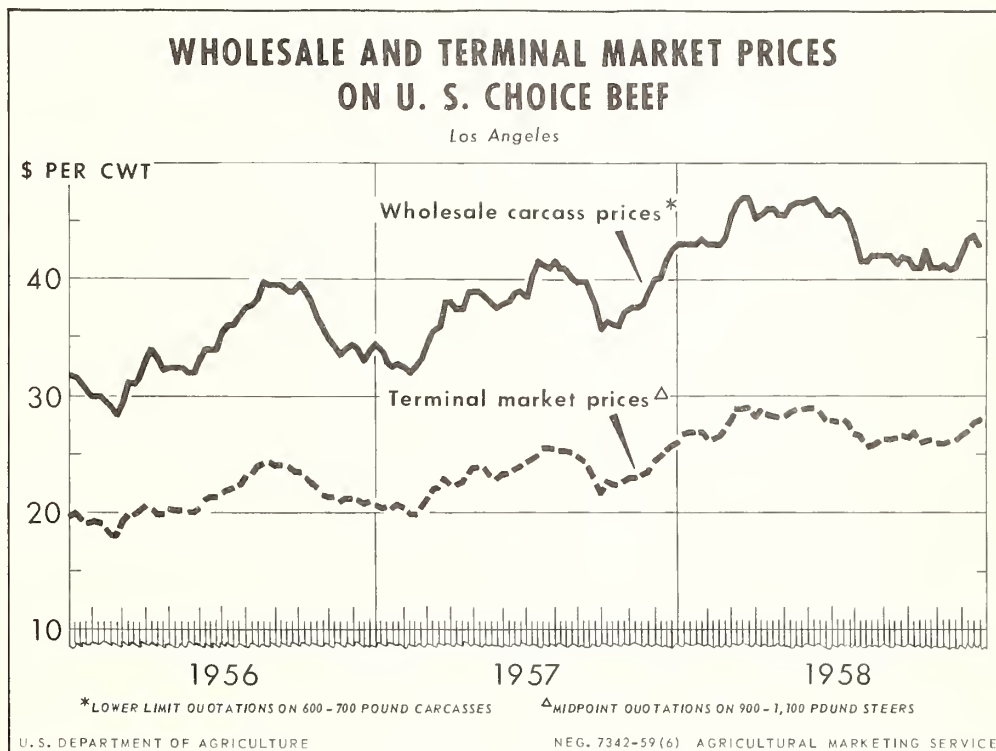


Figure 24

^{40/} The earlier discussion dealing with factors affecting cyclical changes and trends and seasonal variations in wholesale prices applies equally well here, because these prices are highly correlated with slaughter cattle prices.

^{41/} Agr. Mktg. Serv., USDA, The Livestock Situation, LMS-100, January 1959.
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Price Comparisons Among Terminal Markets

Prices of Choice grade cattle usually average higher at Chicago than at West Coast markets (table 35). This probably means, despite the fact that the Corn Belt is the principal area of fed cattle production in the United States, that the supply of Choice grade cattle ordinarily is higher in western markets, in relation to demand for that grade, than in midwestern and eastern consuming centers. In part, it also may reflect the effect of inshipments from Denver. Seltzer reports that, although prices for Choice grade cattle on the terminal market at Los Angeles have been low compared to Chicago or Denver, prices for good and commercial steers and heifers and for cows have been stronger at Los Angeles than at Chicago or Denver. ^{42/} Price differentials between steers and heifers, found by Seltzer, were wider at Los Angeles than at these other markets. He reports further that Los Angeles prices on steers trended upward during 1945-54 at a slightly greater rate than similar prices at Chicago or Denver. This period, however, does not include the relatively low prices at Los Angeles in 1955 and 1956.

Prices of Choice grade cattle usually are slightly higher at Los Angeles than at San Francisco and lower than those at Portland. Some of these differences might have resulted from differences in market news reporters or the reporting procedures employed. The higher prices at Portland, however, probably reflect the relatively small numbers of cattle that are fed in the Northwest, together with the cost of transporting fed cattle to Portland from Idaho, California, or midwestern States.

San Francisco and Los Angeles packers actively compete for cattle at feedlots in the Central Valley area and elsewhere. Consequently, slaughter cattle prices at the two markets, it appears, should be about the same. Fed cattle in the Central Valley can flow with about equal facility and cost to either market.

Differences between the two markets in demand for Choice cattle or in market structure are possible explanations of the higher prices at Los Angeles, assuming that the reported prices are accurate and meaningful. This would mean that the higher concentration of retail chains and independent supermarkets in Los Angeles and their emphasis on the Choice grade may have a price-lifting effect on slaughter cattle prices in that market. Although this conclusion appears sound, it must be recognized that relatively few fed cattle actually move through the terminal market at Los Angeles, and still fewer move through the stockyards at San Francisco. The average within-grade quality or conformation of the Choice grade cattle at San Francisco might be lower than at Los Angeles. The long periods of unchanged prices for Choice cattle at San Francisco, which were most frequent in 1958, suggest that 900-to-1,000-pound Choice slaughter cattle at the market were too few to provide an adequate basis for reporting. ^{43/} The Market News Service apparently concurred in this belief, as it ceased reporting slaughter livestock prices at San Francisco early in 1959.

^{42/} See pp. 39-45 of publication cited in footnote 9.

^{43/} In computing average slaughter cattle prices for San Francisco, it was necessary for some weeks to use prices reported on sales at the nearby Stockton market.

Table 35.--Quarterly, annual, and 3-year average prices on 900-1,100-pound Choice grade steers at 4 terminal markets, 1956-58

Year and quarter	Los Angeles	Chicago	San Francisco ^{1/}	Portland
	Dollars	Dollars	Dollars	Dollars
<u>1956</u>				
1st quarter	19.36	20.53	18.71	19.20
2nd quarter	20.37	21.13	20.06	20.47
3rd quarter	23.15	25.07	21.85	23.77
4th quarter	21.50	24.29	20.63	22.58
Annual average ...	21.10	22.76	20.31	21.50
<u>1957</u>				
1st quarter	20.88	21.88	20.34	21.24
2nd quarter	23.22	23.68	22.98	23.50
3rd quarter	24.70	25.32	23.23	24.51
4th quarter	23.48	25.39	22.81	23.63
Annual average ...	23.07	24.07	22.34	23.22
<u>1958</u>				
1st quarter	27.33	28.89	26.19	26.41
2nd quarter	28.60	29.31	27.54	28.61
3rd quarter	26.77	26.92	25.85	27.14
4th quarter	26.53	27.36	25.35	27.22
Annual average ...	27.31	28.12	26.23	27.34
3-year average ...	23.83	24.98	22.96	24.02

^{1/} Based partly on Stockton market prices.

Price Comparisons Among Markets in the Southwest

Slaughter cattle prices are reported in the Southwest for Phoenix, Ariz., El Centro, Calif., and Los Angeles. ^{44/} As Los Angeles is the principal slaughter center for fed cattle in southern California and Arizona, it would be expected that prices in these three markets would be closely related. Prices at Phoenix and El Centro at any particular time theoretically should be lower than the price at Los Angeles by about the cost of trucking the cattle from

^{44/} The reports on Phoenix and El Centro were initiated about August 1, 1956. Slaughter cattle prices also are reported on sales at Visalia, but these were not analyzed.

these markets to Los Angeles. The transportation cost on live cattle from Phoenix to Los Angeles is about \$0.55 per hundredweight, and from El Centro the charge is \$0.52 per hundredweight. Price differences among the markets were smaller than these transportation costs on both the Choice and Good grades (table 36). The Phoenix prices on 900-1,100-pound steers averaged lower than comparable Los Angeles prices in each of the 3 years by about 40 cents per hundredweight, as expected, but they frequently were higher, particularly in the late spring or early summer. Prices at El Centro, however, averaged higher during most of the period. They were significantly higher for 1956 and 1958 on both Good and Choice grade steers. This either reflects a relatively weak Choice grade market at Los Angeles, or sale at this market of beef animals that were relatively low in quality within the grade, or both.

On the other hand, changes in prices of Choice grade cattle at Los Angeles appear to be slightly more closely correlated with changes in wholesale carcass prices at Los Angeles for that grade than cattle prices at either of the other markets. This might indicate that the Los Angeles live cattle market was more sensitive to changes in demand and carcass supply conditions in Los Angeles than the other live cattle markets. Another possibility, however, is that the Los Angeles wholesale market was more sensitive to changes in live cattle prices at Los Angeles than at Phoenix or El Centro.

Changes in slaughter cattle prices and wholesale carcass prices at Los Angeles usually correspond closely, and even small changes in one are reflected in the other. The two series, as explained earlier, are subject to the same economic influences. Month-to-month variations in the price index on 900-1,100-pound steers during 1956-58 at Los Angeles, according to results of statistical analyses, explained 99 percent of the variation in Choice grade carcass prices at Los Angeles. Week-to-week changes in each of the series are not so highly correlated, although the two series correspond closely in point of time. Changes in live steer prices sometimes follow changes at wholesale, but more frequently (and even these instances are relatively few), they appear to precede changes at the wholesale level by about a week.

Packers' Slaughter Margins

Packers' gross margins in slaughtering beef sold to chains and other large-volume buyers during 1956-58 were calculated for three grades of beef and for packers in four different cities, Los Angeles, San Francisco, Portland, and Chicago. ^{45/} Midpoint terminal market prices were used. On Choice, prices for 900-to-1,100-pound steers were converted to carcass weight equivalents assuming a 60-percent dressing yield, and the result was subtracted from the average of the lower limit wholesale quotations on 500-to-600 and 600-to-700 pound steers. ^{46/} This procedure implies the computing of margins on 1,000-pound steers that yield 600-pound carcasses, or 60 percent, which is a realistic percentage on Choice steers.

^{45/} Portland-Seattle-Tacoma wholesale prices were used in calculating slaughter margins for packers in Portland.

^{46/} For instance, the midpoint Choice steer price of \$23.22 per cwt. + .60 = \$38.70 per cwt., and when subtracted from the average of the lower limit wholesale prices for 500-600-pound and 600-700-pound beef carcasses (\$37.50 per cwt.) yields \$-1.20 per cwt.

Table 36.--Quarterly and annual prices per hundredweight on 900-1,100-pound Choice and Good grade steers and average price differences among 3 southwestern markets, 1956-58

Year and quarter	Phoenix	El Centro	Los Angeles	Price differences	
				Los Angeles- El Centro	Los Angeles- Phoenix
	Dollars	Dollars	Dollars	Dollars	Dollars
Choice grade					
<u>1956</u>					
4th quarter	21.37	22.10	21.50	-0.40	-0.13
<u>1957</u>					
1st quarter	20.61	21.00	20.88	- .12	.27
2nd quarter	23.08	23.54	23.22	- .32	.14
3rd quarter	24.31	24.44	24.70	.26	.39
4th quarter	22.96	23.34	23.48	.14	.52
Annual average ...	22.74	23.08	23.07	- .01	.33
<u>1958</u>					
1st quarter	26.61	27.19	27.33	.14	.72
2nd quarter	28.57	29.01	28.60	- .39	.03
3rd quarter	26.53	27.15	26.77	- .38	.24
4th quarter	26.02	26.44	26.53	.09	.51
Annual average ...	26.93	27.45	27.31	- .14	.38
Good grade					
<u>1956</u>					
4th quarter	19.08	20.14	19.80	- .34	.72
<u>1957</u>					
1st quarter	18.97	19.51	19.47	- .04	.50
2nd quarter	21.50	22.19	21.87	- .32	.37
3rd quarter	22.78	23.00	22.86	- .14	.08
4th quarter	21.64	22.10	22.00	- .10	.36
Annual average ...	21.22	21.70	21.55	- .15	.33
<u>1958</u>					
1st quarter	25.28	25.51	25.61	.10	.33
2nd quarter	27.28	27.08	26.87	- .21	-.41
3rd quarter	25.07	25.07	25.15	.08	.08
4th quarter	24.50	24.89	25.25	.36	.75
Annual average ...	25.53	25.64	25.72	.08	.19

For the Good grade, market prices on 900-1,000-pound steers and the average of lower limit wholesale prices on 500-to-600 and 600-to-700 pound steers were used. Although this implies a dressing percentage of 60 percent, the midpoint terminal market prices were divided by 0.58, which is a more realistic figure for Good grade steers. No weight divisions in Standard grade terminal market prices are reported. Consequently, in computing margins for this grade, the midpoint of the terminal market price range reported was converted to a carcass basis by assuming a dressing percentage of 56 percent. The resulting prices were subtracted from lower limit wholesale prices reported on 500-to-600-pound Standard grade carcasses.

Differences among grades or cities in packers' slaughter margins, as computed in the manner outlined, should be interpreted with caution. The procedure permits use of meaningful wholesale prices and provides estimates of margins on sales to large-volume buyers. However, margins on sales to these buyers undoubtedly are lower than the margins on sales to all buyers. The margins do not take into account such factors as differences over time or among regions or cities in dressing percentages, shrinkage, trimming loss, or values of edible and inedible byproducts. Perhaps the most serious shortcoming is that, although the adjusted slaughter steer prices include cost to the packer of hides and all other byproducts, packers' wholesale sales prices were not adjusted to include sales values of byproducts. Another factor which affects the comparisons between cities is unknown differences in market news reporters at the live and wholesale levels.

Los Angeles Packers' Slaughter Margins

Slaughter margins of Los Angeles packers on Choice, Good, and Standard grade steers all followed the same general pattern during 1956-58 (fig. 25). They tended to increase gradually through 1956 and the first part of 1957, and to drop irregularly during the remainder of the period. During short-term weekly or month-to-month periods, they were positively correlated with prices; that is, they tended to rise as live and wholesale prices rose, and to drop when prices were falling, which means that wholesale carcass prices tended to rise and fall faster than live steer prices. Over longer periods, slaughter margins seem to be low when prices are at exceptionally low levels, to increase as prices approach a moderate level, and to drop again as prices reach very high levels.

Despite the caution mentioned earlier, the minus slaughter margins on all three grades cannot be ignored. They seem to indicate that Los Angeles packers usually were selling carcass beef to chains and other large-volume buyers at a gross loss of 1 to 2 dollars per hundredweight. On this basis, packers' net losses on carcasses, after adjusting for expenses of handling and selling the carcasses, would have been even greater. On the other hand, if the value of edible and inedible byproducts were taken into account, small profits, particularly on Choice, might have appeared. According to data obtained from one Los Angeles packer, byproduct values varied between \$2 and \$3.50 per hundredweight in 1958. According to their own reports, packers made their imputed profits, if any, from byproducts.

Comparisons with Chicago

Packers' slaughter margins at Chicago generally were lower and more variable than those at Los Angeles (table 37). A negative margin on Choice for the 3-year

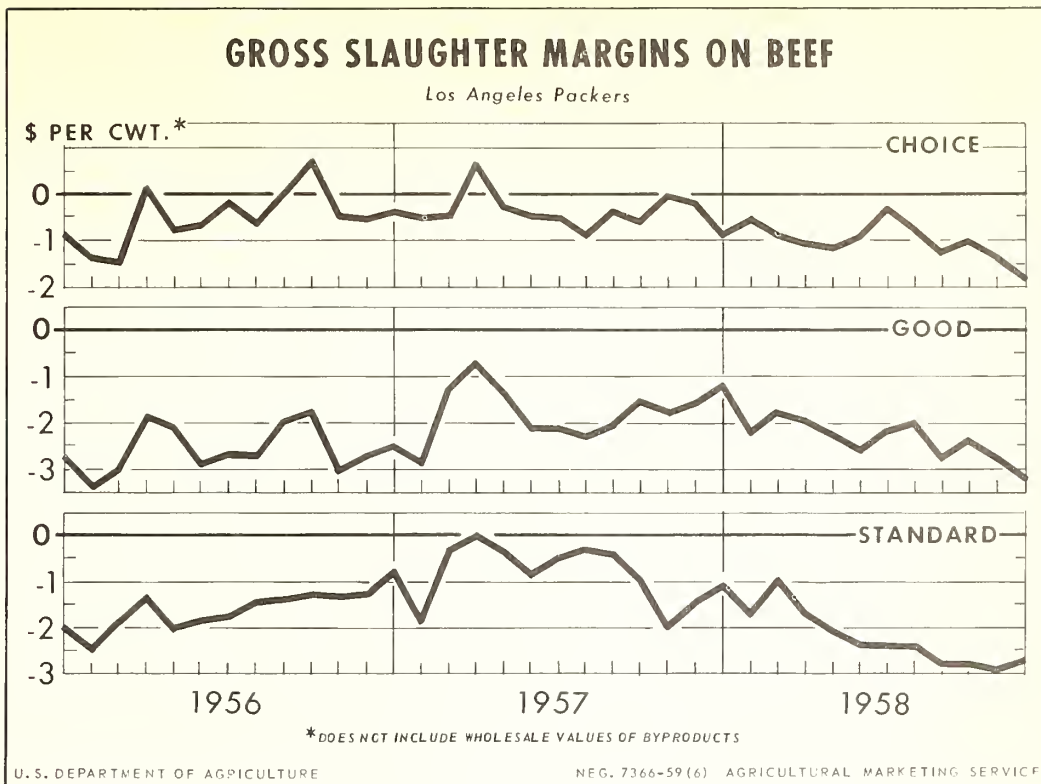


Figure 25

period of \$-0.59 at Los Angeles compares with \$-2.27 at Chicago. On Good and Standard, Good particularly, differences were smaller. Slaughter margins at Chicago on all the grades trended downward throughout the period. They were higher than at Los Angeles on each grade much of the time in 1956, but trended downward more sharply in 1957 and 1958. Chicago packers' margins on the Good grade, however, remained relatively stable until the latter part of 1957.

Differences between the two areas in byproduct values account for most of the difference between Los Angeles and Chicago slaughter margins on beef as computed. Wholesale values of many inedible products, hides particularly, and some edible byproducts were considerably higher at Chicago than at Los Angeles. Differences between the areas in dressing percentages also may have been a factor.

Comparisons with Other West Coast Cities

Los Angeles packers' slaughter margins generally averaged lower during 1956-58 than those of packers in San Francisco or Portland (table 37). The principal exception to this was Portland packer margins on Standard grade steers, which dropped sharply in 1957. The greatest difference on Choice was between Los Angeles and San Francisco, but part of this difference probably resulted from considerations already mentioned such as some differences between wholesale market news reporters and the small number of fed cattle sales at San Francisco. Another possible factor is the light concentration of large-volume retail buyers in the San Francisco area compared with Los Angeles.

Table 37.--Packers' slaughter margins on Choice, Good, and Standard grade steers, per hundredweight, in 4 cities, by quarters, 1956-58

Date	Los Angeles	San Francisco	Portland	Chicago
	Dollars	Dollars	Dollars	Dollars
Choice 1/				
<u>1956</u>				
1st quarter	-1.20	+1.06	-0.77	-1.70
2nd quarter	- .41	+ .90	- .74	-1.88
3rd quarter	- .23	+2.86	+ .27	- .45
4th quarter	- .09	+2.41	+ .81	-1.28
Annual average ...	- .48	+1.80	- .11	-1.33
<u>1957</u>				
1st quarter	- .43	+ .92	+ .03	-2.34
2nd quarter	0	+ .84	- .47	-2.46
3rd quarter	- .57	+2.51	- .36	-1.77
4th quarter	- .28	+ .60	- .58	-2.09
Annual average ...	- .32	+1.18	- .33	-2.17
<u>1958</u>				
1st quarter	- .76	+ .62	+ .48	-3.99
2nd quarter	-1.04	+ .82	-1.27	-3.85
3rd quarter	- .76	+ .96	- .15	-2.62
4th quarter	-1.40	+1.07	- .43	-2.77
Annual average ...	- .99	+ .87	- .34	-3.31
3-year average ...	- .59	+1.28	- .26	-2.27
Good 2/				
<u>1956</u>				
1st quarter	-3.09	-1.86	-1.44	-2.78
2nd quarter	-2.29	- .64	- .83	-1.16
3rd quarter	-2.38	+ .79	- .08	-1.60
4th quarter	-2.32	- .32	- .78	-1.31
Annual average ...	-2.51	- .50	- .78	-1.71
<u>1957</u>				
1st quarter	-2.29	+ .22	-2.29	-2.24
2nd quarter	-1.36	+ .38	-1.03	-1.26
3rd quarter	-2.06	+ .32	-1.09	-1.69
4th quarter	-1.79	- .71	-1.65	-3.20
Annual average ...	-1.87	+ .16	-1.51	-2.10

(Continued)

Table 37.--Packers' slaughter margins on Choice, Good, and Standard grade steers, per hundredweight, in 4 cities, by quarters, 1956-58--Continued

Date	Los Angeles	San Francisco	Portland	Chicago
	Dollars	Dollars	Dollars	Dollars
Good 2/ (Continued)				
<u>1958</u>				
1st quarter	-1.77	-1.14	-1.20	-3.66
2nd quarter	-2.33	-1.29	-1.70	-3.42
3rd quarter	-2.36	- .87	-1.21	-3.94
4th quarter	-2.70	- .94	-1.74	-4.02
Annual average ...	-2.28	-1.05	-1.44	-3.76
3-year average ...	-2.22	- .46	-1.24	-2.52
Standard 3/				
<u>1956</u>				
7 months 6/30-12/31	-1.46	- .55	- .82	-2.09
<u>1957</u>				
1st quarter	-1.07	- .15	-2.40	-2.48
2nd quarter	- .39	- .24	-1.71	-1.12
3rd quarter	- .34	- .01	-2.77	-2.19
4th quarter	-1.61	- .90	-3.06	-2.84
Annual average ...	- .85	- .16	-2.47	-2.61
<u>1958</u>				
1st quarter	-1.34	-2.12	-2.67	-3.11
2nd quarter	-1.96	-3.58	-1.47	-3.57
3rd quarter	-2.56	-1.50	-2.05	-3.95
4th quarter	-2.72	-2.14	-3.43	-3.98
Annual average ...	-2.15	-2.33	-2.38	-3.67
3-year average ...	-1.48	-1.02	-1.89	-2.64

1/ Derived by subtracting terminal-market prices on 900-1,100-pound Choice steers converted to carcass basis, using 60-percent yield, from average wholesale prices of 500-600 and 600-700 pound Choice beef carcasses.

2/ Derived by subtracting terminal-market prices on 900-1,100-pound Good grade steers converted to carcass basis, using 58-percent yield, from average wholesale prices on 500-600 and 600-700 pound Good grade beef carcasses.

3/ Derived by subtracting terminal-market prices on Standard grade beef (all weights) converted to carcass basis, using 56-percent yield, from average wholesale carcass basis of 500-600-pound Standard grade carcasses.

There was relatively little correspondence in margins among West Coast cities with respect to specific points in time. Trends during the 3-year period in general were similar, but slaughter margins at Los Angeles trended downward sharply in 1958, compared with a relatively small decline at Portland and an upward trend in margins of San Francisco packers. Slaughter margins of Portland packers corresponded more closely than did San Francisco packer margins to those at Los Angeles. A possible reason for this is that the structure of the meat industry and competitive conditions at Los Angeles and Portland are more like those at Los Angeles than at San Francisco.

The Economic and Competitive Situation of Los Angeles Packers

That the meatpacking business is not a highly profitable one in terms of net returns on sales or even in terms of net returns on equity capital is well established. Most Los Angeles packers, according to the weight of available evidence, operate under conditions of particularly severe economic straits. That meatpackers' profit ratios are low in that area is attested to by the fact that, in recent years, several of the national packers have closed their Los Angeles slaughtering plants. After completion of fieldwork for this report, the largest volume independent packer-supplier of chains in the area ceased slaughtering the higher grades of beef. General discussions with representatives of some institutions that finance Los Angeles packers and with local market observers indicated that some local packers were in financially precarious or unstable situations.

Economic difficulties of Los Angeles packers stem, in part, from their inability or failure to adjust to changes in their economic environment. Most of the packing plants in the area were established 20 to 30 years ago and few have been thoroughly renovated or modernized. Increases in slaughter since World War II have taken place in existing plants and, in many cases, this has resulted in overcrowded conditions and much inefficiency. But as economic conditions change and as wide variations take place in purchases by chains and other large-volume buyers, most of the packers also are subject to alternate periods of over- and under-utilization of capacity. Additional circumstances contributing to economic difficulties of packers result mainly from (1) periods of exceptionally strong competition among themselves for cattle, (2) the stronger competitive position of the retail food chains, and (3) lack of adequate or appropriate information on market supplies and prices and on operating costs.

Packers' Slaughter Margins and Absolute Price Differences Between Live and Wholesale Prices

Los Angeles packers' slaughter margins are low under the most favorable circumstances, as indicated earlier. Intense competition among the packers for cattle at certain times reduces these margins even further. This can be illustrated by considering differences in terminal market live animal prices and wholesale prices at Los Angeles for 1954-58, and comparing these with packers' slaughter margins (fig. 26).

The live-wholesale price difference, as indicated by the trend lines in figure 26, dropped during 1954-55 when prices were trending downward and increased irregularly during 1956-58 when prices were rising. Trends in Los

PACKERS' SLAUGHTER MARGINS AND ABSOLUTE PRICE DIFFERENCES

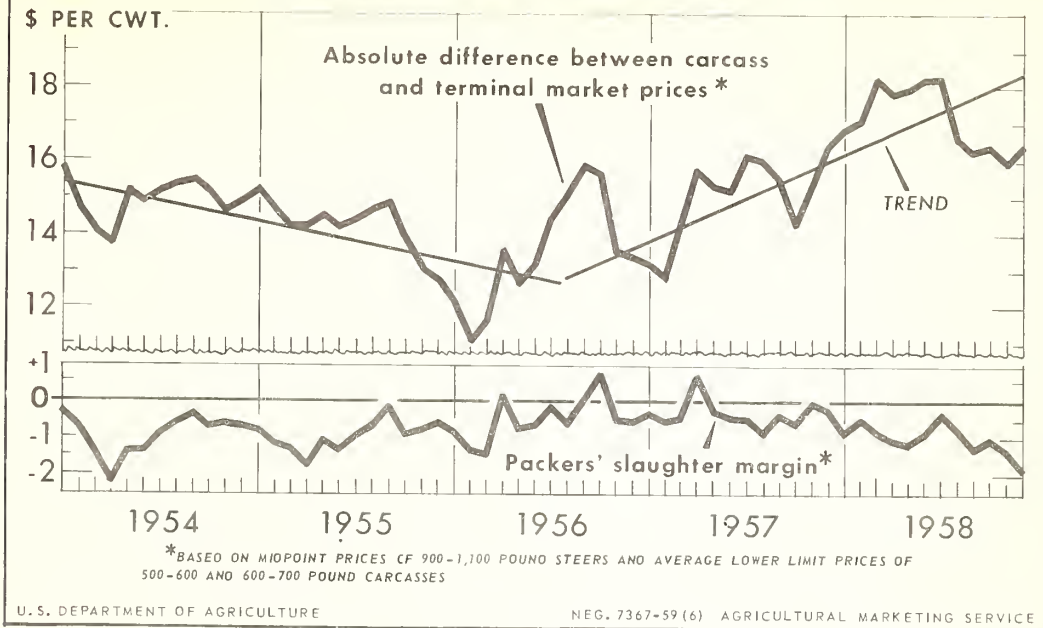


Figure 26

Angeles packers' slaughter margins, the difference between slaughter steer prices adjusted for yield and the average wholesale carcass prices, were almost the exact opposite of this (lower portion, fig. 26). They rose during 1954-56 and dropped through 1957 and 1958.

The surface reason for the opposite trends is simple, but the basic, underlying explanation is more complex. When adjusting a price series by a fixed percentage, the adjustment is larger in absolute terms when the prices are high than when they are low. Thus, $\$18$ (live steer price per hundredweight) $\div .60$ (yield) = $\$30$ (live steer price per hundredweight on a carcass basis) and $\$30 - \$18 = \$12$; but a higher live steer price, say, $\$24 \div .60 = \40 and $\$40 - \$24 = \$16$. Therefore, if wholesale carcass prices always were exactly the same as live animal prices converted to a carcass basis, the absolute difference between the live and carcass prices would drop when prices were falling and increase when prices were rising. In this case, also, the packer's slaughter margin, as computed here, would remain constant at zero. This means that, in order to have stabilized margins for packers in 1954-58, it would have been necessary for the absolute difference in the prices to (1) narrow more than it did in 1954-55 and (2) trend upward more sharply than it did in 1956-58.

Packers and others on the Los Angeles market apparently realize that absolute differences between live and carcass prices almost inevitably must rise sharply when prices are rising. The trends in packers' margins during 1954-58, however, introduce a serious question. Did lack of complete understanding or

appreciation of the principle described here contribute to these trends? That is to say, in 1956-58 did this lack of appreciation or understanding of the principle, in the face of strong competition among packers for cattle, cause some of them to sell carcasses at lower prices, or pay higher prices for cattle, than otherwise they might have? Either or both of these seem possible, because only a few buyers in a competitive situation are required to establish price levels.

In time periods of the length considered here, packers' beef slaughtering facilities are relatively fixed and limited, and a labor crew of about equal size is required to operate a beef packing plant at capacity or much less than capacity. Consequently, costs per unit of output rise sharply as volume drops below capacity.

When fed cattle are plentiful and prices are down, packers attempt to establish sales outlets which will permit them to operate at or near capacity. After this has been accomplished, they cannot greatly increase their volume when available supplies continue to increase without greatly increasing their unit costs, and so live cattle prices drop further as in late 1956 and early 1957. Alternatively, when fed cattle supplies become relatively short, packers intensify their efforts to find slaughter cattle and bid up prices in attempting to maintain their slaughter near capacity and to retain their customers. Thus, as available supplies dropped during 1957 and 1958, packers apparently bid up prices on live Choice cattle more than wholesale prices were bid up by competition among chains and other carcass buyers, with the result that packers' margins trended downward. Competition becomes particularly strong for Choice grade cattle that meet the specifications of most retail food chains in Los Angeles, as supplies of these cattle usually are more restricted than supplies of other cattle.

Established practices may prevent packers from following procedures that would stabilize their margins. However, a wider understanding and more appreciation of the basic principle described, simple as it may appear, might improve the packer's ability to maintain slaughter margins at a reasonable level of profit.

Price and Packer Margin Comparisons With Retail Chain Margins and Purchases

The strong competitive bargaining positions of most of the chains relative to the situations of most packers in the market, and wide variations from week to week in purchases by chains, also affect Los Angeles packers' margins and profits. The chains undoubtedly often provide buying strength to the market and bolster prices or push them up more sharply. In some instances, however, their actions apparently contribute to instability and uncertainty in the market, and depress prices.

Chain retailers' margins, as noted earlier, tend to rise as prices fall seasonally and to fall as prices rise seasonally. Although packers' slaughter margins for beef do not seem to have a strong seasonal pattern, in the short run they appear to be more directly than indirectly related to prices.

Over the longer period 1956-58, chain retailers' margins tended to rise with the general level of beef prices while packers' margins trended downward. The packers, as explained, forced their margins down during this period by competing strongly with one another for beef animals that would meet the specifications of large-volume buyers. In competing also for sales to these buyers, the packers made it unnecessary for the buyers to bid up wholesale prices as much as beef animal prices increased. The chain retailers, nevertheless, increased their retail sales prices about as justified by the rise in beef animal prices.

In late 1956 and through January 1957, chain retailers' margins rose rapidly to a relatively high level because retail sales prices dropped relatively little in response to a rather severe drop in wholesale prices. At the same time, packers' margins were relatively high because live animal prices fell even faster than wholesale prices. This is an instance in which the chains, by a more moderate pricing policy, might have increased prices and returns received by producers, either by (1) reducing their retail prices more in line with wholesale prices, accepting a usual or average margin, and thereby stimulating beef sales, or (2) exerting less downward pressure on wholesale prices and indirectly on producer prices.

The later period, March and early April 1957, is an example of a market condition that results in serious maladjustments among buyers and sellers and that, according to packers and others, occurs frequently (fig. 27). 47/ The

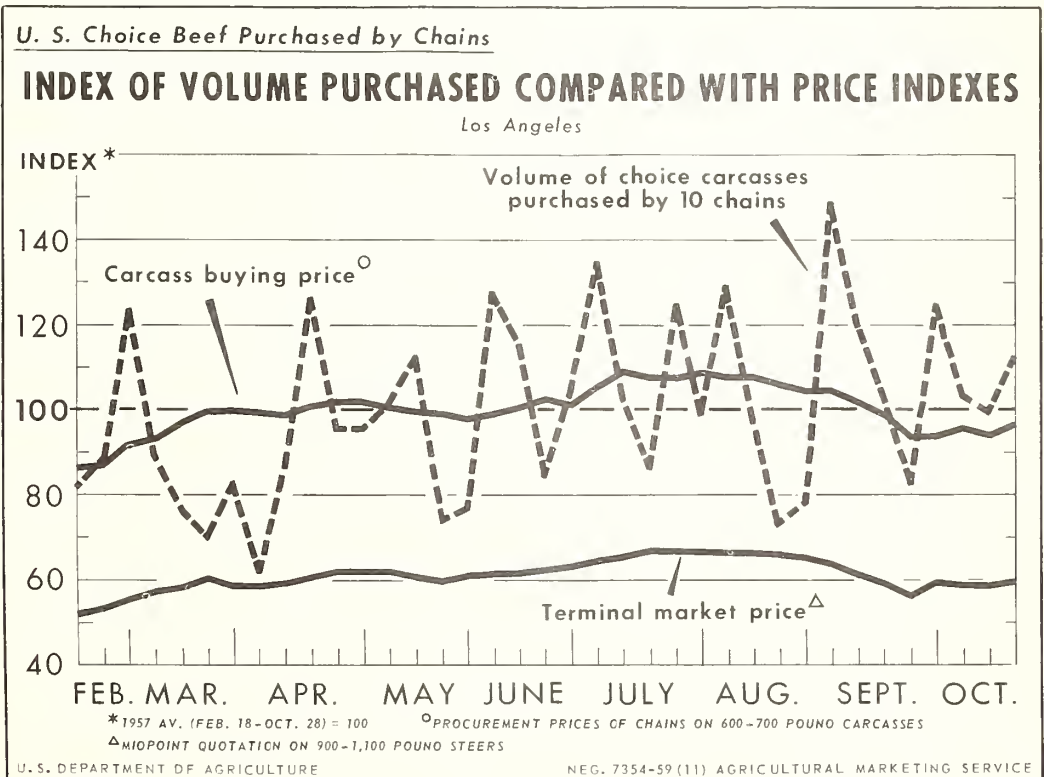


Figure 27

47/ Market conditions in Los Angeles were personally observed rather closely at this time by the authors.

period illustrates (1) types of repercussions that a sharp reduction in local supplies of fed cattle can have, (2) the process of adjustment that takes place, and (3) the influence of market structure in this process. It leads to the conclusion that under certain conditions sharp reductions in purchases by the chains probably can temporarily affect prices paid by packers for Choice grade animals, disturb the market by adding uncertainty, and place some packers at a severe disadvantage. 48/

The rise in the general level of prices in February and early March 1957 was accompanied by a gradual drop in numbers of readily available cattle on feed in the Southwest. As knowledge of the tighter supply situation spread among packers, they quickly intensified their efforts to find suitable slaughter cattle, and total slaughter in the market increased sharply during the last week of February. The following week the chains greatly increased their purchases of carcasses, and, realizing that future supplies would be shorter, they also removed from the market much of the supply of wholesale cuts held by packers, wholesalers, and others. Wholesale prices rose more than live animal prices at this time, and packers' margins increased. In the face of the apparent strong demand by retailers and more favorable price relationships, many of the packers, particularly those specializing heavily in slaughtering beef for chain retailers, began to scour the countryside even more earnestly in search of beef animals suitable for slaughter. Some increased their slaughter substantially, but total slaughter necessarily dropped. But purchases by the chains dropped even more sharply than total slaughter. For a week or so, some chains ceased buying beef altogether as they shifted their merchandising programs to other meats. Although the packers noticed that purchases by chains had dropped most, even those that had been slaughtering heavily were not greatly concerned. They reasoned as follows: "Prices, after all, are rising and the longer retailers delay--up to a point--before buying, the larger will be my speculative gain. On current sales I am enjoying a higher margin than in recent months." But packers found that their sales volumes remained low, advertisements on other meats appeared, and their inventories increased. Packers, consequently, reduced their purchases of live animals and their rates of slaughter.

Price changes accompanied the changes in buyer-seller activity. With the reduced activity of packers at terminal and country markets, a decline of about \$0.62 per hundredweight in Los Angeles terminal market prices of Choice grade 900-1,100-pound slaughter cattle appeared and was followed by a drop of about \$1.75 in Choice grade beef carcass prices (fig. 27). The fact that the price change in the live cattle market came first appears to be evidence that some factor other than the drop in retail chain purchases was responsible. However, the price drop on live cattle also was preceded by several weeks of low-level purchases by the chains (fig. 27). These purchases were unusually low at the time that the drop came in live Choice grade steer prices. The temporary decline in slaughter cattle prices in the face of increases at the wholesale level appears to have resulted from reduced packer interest in purchases of live cattle, together with a general feeling among packers that fed cattle supplies would become increasingly scarce and that the chains soon would be forced to increase their purchases. Subsequently lower prices for live cattle, with little evidence that the buying interest of the chains had increased, may have weakened the bargaining position of packers in dealing with chain buyers, and, consequently,

48/ See pp. 43 and 56-57 for a description of chain retailers' margins and pricing policies during this period.

wholesale prices also dropped temporarily. Some comparisons with other markets tend to support this hypothesis. 49/

Packers' slaughter margins remained at a relatively high level at this time, but high margins were of little comfort to packers, because their slaughter volumes were down and their unit costs were high. Their margins rose mainly because they were less active than earlier in buying beef animals, and this had the effect of deferring the rise in beef animal prices. Many, nevertheless, were severely affected financially. Packers' margins tended to rise on several occasions during 1954-58, according to the packers. This occurred when the chains reduced their purchases and slaughter steer prices dropped or failed to rise with wholesale prices because packers' live animal requirements at these times also were reduced.

During the 2-week period following May 13, 1957 (fig. 27), Choice steer prices at Los Angeles might have been affected by sharp reductions in carcass purchases by the retail chains. A decline in price at Los Angeles on Choice steers of nearly \$1 per hundredweight during this period was accompanied by low-level and dropping purchases by the chains. The decline compares with an \$0.08 drop at Chicago and declines at San Francisco and Portland of about \$0.50. These are examples of how the Los Angeles chains might have affected producer and wholesale prices at various times. More instances could be cited where producer prices probably were either sustained or strengthened by high-level chain purchases of beef. It seems possible, however, that, within relatively short periods of 2 or 3 weeks, severe reductions in purchases by chains influence prices at the producer and wholesale levels to some extent.

Packers' Needs for Information

In interviews, several packers stated that their principal guides in buying cattle were their wholesale selling prices, and they implied that they expected to buy live cattle at prices which would result in a cost per animal equal to the value of the carcass. Other packers described this principle by saying that they expected to make a profit, if any, from byproducts, that is, edible and inedible offal. As computed here, this objective would mean zero margins on carcasses. But as packer margins on this basis usually are negative, such an objective in buying and selling probably seems desirable to packers. The situation illustrates the need of packers, however, for better and more adequate information.

Buying and selling decisions of many packers are based on "established practice," rough "rules of thumb," or application of inadequate accounting data. Los Angeles packers buy and sell in essentially competitive markets. This largely prohibits them from establishing prices, as such, but within limits they

49/ Choice cattle prices at Portland on 900-1,100-pound steers did not falter during this period but marched steadily upward. There was a drop of about \$0.25 per hundredweight at San Francisco in Choice grade steer prices, but this decline came a week after the one at Los Angeles. The following week, prices again increased at San Francisco, while at Los Angeles they fell slightly more. At Chicago, there had been a slight decline--less than \$0.50 per hundredweight--in the price of this weight and grade the week previous to the decline at Los Angeles, but the Chicago price rose nearly a cent during the period of decline at Los Angeles.

can determine the time and circumstances for buying or selling. In making decisions on these matters, they should consider the total potential value of the beef, including byproducts, and unit costs required at various levels of volume for each principal function performed. Many of the packers spend large sums on accounting data, but in most cases these data do not provide the types of information that are most useful in making decisions. Among other things, packers' accounts should separate out-of-pocket or variable costs from overhead or fixed costs that do not vary with volume; these cost data should be converted to unit costs and analyzed to determine how unit costs vary with volume. Such data could be used as improved guides in buying and selling, and would permit packers to determine more precisely the most profitable levels of output. For instance, if their overall gross margins per unit on carcasses plus byproducts dropped or their cost rose so that they were not covering out-of-pocket costs, they might decide that they should stop slaughtering. Better cost data also would provide clues to sources of inefficiency.

In addition to improvements in accounting data, packers need better information on prices paid for cattle in country areas, numbers of cattle on feed by area and length of time on feed, number of cattle sold at feedlots for slaughter, and edible and inedible byproduct values. Some improvements in the local wholesale market news report, to provide information on prices by type of buyer and on within-grade differences in carcass quality, also could be used to advantage by packers.

Los Angeles packers also need help to determine where and in what manner their costs might be reduced. This could be provided through research that they could jointly sponsor. Sources of cost savings that are not readily apparent to an individual firm often can be spotted by the comparisons that are provided by economic cost research.

SIGNIFICANCE OF FINDINGS

The basic aim of the study was to reveal problems in marketing of beef in Los Angeles, delineate principal sources of these problems, and develop facts for use by the industry and others in improving the efficiency of the marketing process. The findings indicate that problems, real or imagined, in marketing beef in Los Angeles stem primarily from two interrelated sources. One of these is changes in market structure and competition. The other involves all of the factors contributing to an uneven flow of the product and of marketing information through the marketing channels. Within each of these are numerous contributing problems and questions of interest to individual marketing firms. The findings, however, go beyond this in their implications, and are concerned with questions of public policy with regard to changes in market structure and competition, specific marketing practices, the Federal grading of beef, and publicly supported marketing information on livestock and meat. Public policy implications, in turn, are important to private firms as well as public officials, because policies or practices that become established in providing services such as grading or marketing information indirectly affect the efficiency of individual firms and the marketing system. All of the considerations ultimately reduce to a question of effects on marketing efficiency; that is, on "operational efficiency," which is concerned with input-output relationships, or on "pricing efficiency," which is concerned with the ease, effectiveness, and accuracy with which prices are established and transmitted to all segments of the market, including producers.

Implications of Changes in Market Structure and Competition

Structural changes in the Los Angeles market for beef are related to problems in that market for two principal reasons:

First, the changes in structure that appeared first at the retail level required adjustments by packers and other firms at all other levels of the marketing system. But firms at these other levels differed greatly in their ability to make adjustments. Changes, therefore, took place in competitive relationships among firms of the same general type, in "horizontal" competitive relationships. Therefore, some firms, such as packers who could not obtain necessary capital for required adjustments, continued to operate at a reduced level of efficiency.

Second, the structural changes made it more difficult than before for packers and others to make adjustments and improvements in their operations. Changes took place in competitive relationships between groups of firms in "vertically" competitive relationships, such as those between packers and retailers, at different levels of the marketing system. ^{50/} Packers and other suppliers of beef found themselves faced with new competitive disadvantages. The presence of many financially and competitively weak buyers and sellers among the packers and wholesale suppliers was a principal result of changes in both horizontal and vertical competitive relationships. This, in turn, had interfered to some extent with the adoption of more efficient marketing facilities and techniques, and had produced some new sources of uncertainty and new problems in pricing.

The Process of Change

Structural changes in the Los Angeles market appeared first at the retail level, but this is not the original source. A host of factors, including increased population, increased consumer incomes, and suburbanization, led to the supermarket movement and the horizontal integration of retail grocery firms into corporate chains. Changes in consumer tastes and preferences and emphasis by chain retailers on standardization and uniformity resulted in detailed retail specifications. Sweeping changes took place in the structure of retailing as a result of changes in the demand for beef, competition among retailers, availability of new technology, and other factors.

Changes appeared also at the producer end of the marketing system. After World War II, consumers and retailers in Los Angeles were no longer satisfied with grass-fed beef and it was partly for this reason that a commercial feeding industry developed in the Southwest. The availability of byproduct feeds and efficiencies that could be realized by large-volume operations in assembling feeds from a wide area and by providing producers with marketing services were additional contributing factors.

With vast changes taking place on both ends of the marketing chain, adjustments and changes in the middle were inevitable. Specialization at the packer and wholesaler level became the order of the day because cost reductions in providing marketing services were vital to survival. As long as packers were

^{50/} Vertical competition can be defined as competition among firms at different levels of the marketing system for bargaining position or market power.

selling mainly to small independent grocers and meat markets, there were advantages to packers in handling a full line of meats, including pork and processed sausage meats. Chain buyers, however, possessed sufficient buying power and knowledge to seek out lowest cost sources of each type of meat.

Packers had enjoyed the comfortable position of dealing with small-volume operators in both buying and selling. But with the development of feedlots and chain retailers, the vertically competitive position of the packer changed considerably. Advantages in the contest for bargaining position in the market shifted to the retail chains.

Accordingly, many packers began to specialize in the particular grades, within-grade qualities, and weights of beef specified by chains. Nonslaughtering wholesale beef breakers appeared and developed to provide specialized breaking services to the chains, the independent supermarkets, and the jobbers. National packers with large plants designed to slaughter and process all species for distribution directly to independent retailers declined in relative importance. Two closed their Los Angeles plants. Nonslaughtering branch houses of national packers shifted more to inshipment, processing, and sale of pork. Independent truck distributors formed an association, developed a trade name which they all used, and specialized in distribution to independent retailers.

Much of this change represented improvements in pricing and operational efficiency at each level of the marketing system. Old facilities and methods of doing business became outmoded, providing the stimulus for introduction of new ones. Mechanical production-line methods of handling large volumes of beef were introduced by producers and feedlot operators and by some packers and wholesale distributors. Technological improvements, changes in the organization of production and distribution, together with an increase in horizontal competition among packers, brought some improvements in operational efficiency which have tended to hold down marketing charges. Increased use of grades and specifications and improvements in market news price reports led to improvements in pricing efficiency. But, in the process of change, new problems arose, new sources of inefficiency appeared, and some effects of imperfections in market structure and competition were intensified.

Sources of Competitive Strength of Retail Chains

Whether reference is made to "weak" sellers or "strong" buyers for beef in Los Angeles, the result is the same. The Los Angeles chain retailers are in a relatively strong competitive position in that market. This strength derives from several sources, including (1) the volume of beef purchased; (2) the chains' ability, recognized by packers, to shift their purchases at any time to other markets such as Denver, or to provide their own slaughtering, processing, distributing, or feeding services through integration; (3) more or less uniform response by the chains to changes in market supply and price conditions; and (4) the fact that the chains usually either possess more knowledge of economic significance than packers or are in a superior position to use this knowledge.

Most of the larger local retail chains in Los Angeles buy heavily from a few packers. Generally speaking, the chains want to maintain good, amicable working relations with their principal suppliers because these are the suppliers that are most dependable in terms of volume and attention to details of specifications. But the fact that a few of the packers supply the Los Angeles chains

with most of their beef does not mean that these packers are in strong vertically competitive positions. Fortunes of these packers are tied closely to buying and selling decisions of their chainstore customers. Even the largest packers frequently find it necessary or expedient to consider carefully the sources of strength listed above. One bit of evidence regarding the importance of these sources is revealed by the experience of the largest volume packer-supplier of chains in the market. In 1957, the five largest local chains purchased one-fourth of their beef from this one packer. Beef handled by this packer was recognized as uniformly superior in terms of chainstore requirements, and his services were considered highly dependable. As a result, he sometimes received small price premiums for his beef. Nevertheless, a year later this packer abandoned the slaughter of beef for fresh sale with the statement that he could not provide required services on beef at a profit.

Most of the chains buy beef almost exclusively from southern California packers. One reason for this is that most are dependent upon packers for storage capacity. Packers know, however, that each of the chains could obtain storage facilities with little difficulty and, if necessary, could rent commercial storage space. In 1958, one chain was operating a meat warehouse, another owned meat warehousing facilities but did not utilize these facilities for meat, and still another was building a warehouse. Packers realize further that, in time, the chains could obtain slaughtering facilities or integrate even more by adding a cattle feeding enterprise to the operations of the company. In addition, the chains can and occasionally do buy carcass beef from packers in other areas. These appear to local Los Angeles packers as threats to their existence and, although seldom mentioned, go far toward producing a local business climate favorable to the chains.

The chains tend to react rather uniformly to changes in prices of beef relative to other meats, and this tendency results in sizable variations in their retail sales and purchases of beef. Effects of these variations are discussed in more detail later (pp. 109-110). As observed there, however, merchandising and procurement practices of chains sometimes are disequilibrating forces in the market and tend to keep packers off balance.

As most packers recognize, chain beef buyers are shrewd businessmen, interested, quite naturally, in buying beef as cheaply and efficiently as possible. They possess about as much knowledge of supply and price conditions as do packers. They know quite well that slaughter steer prices, adjusted for estimated dressing percentages, are good indicators of prices at which packers are likely to sell beef carcasses. In addition, they probably are better informed than packers on changes in buying characteristics of consumers and on present and prospective retail pricing policies and practices. Furthermore, they know which suppliers are most heavily supplied with particular cuts or types of carcasses and which, therefore, are most anxious to sell.

All of these advantages make chain buyers, as viewed by packers, difficult people to deal with. Packers, nevertheless, seek out these buyers because their volume and procurement practices lead to lower selling costs per unit. The offer and acceptance or bid system, particularly, reduces selling costs of packers and minimizes procurement costs of chains. Principal disadvantages of this system from the standpoint of the packer are (1) lack of opportunity to "feel out" the chain buyer and to receive a counter offer, which places some packers, particularly those that are anxious to sell, in a disadvantageous position, and (2) the impersonal nature of the system.

The lower prices paid by chain A appeared fully justified. The differences between the Choice grade price paid by this chain and the average of Choice grade prices paid by others was about equal to the difference between lower limit wholesale price quotations on 500-600 and 600-700 pound beef. This appeared reasonable because chain A handled the heavier beef, whereas the other chains preferred 500-600-pound carcasses. The Choice grade price differential at Los Angeles between these weight groups was smaller than the differential reported at San Francisco and much less than the differential at Portland. Therefore, the difference at Los Angeles between prices paid by chain A and those paid by other chains was largely explained by the difference in weight of beef purchased. But chain A received fewer services from packers than did other chains and, consequently, it appears that either chain A should be paying lower prices or the other chains should be paying higher prices.

The Competitive Situation as a Source of Inefficiency

Both horizontal and vertical competition are greatest when competitors are about equally matched and none is greatly superior in an economic sense. Thus, among the large number of packers in the Los Angeles market, competition is intense. The same is true, to a degree, of the retailing sector. Among the 37 retail food chains in the market, about a half dozen could be considered relatively large, but no one of them has an unusually advantageous situation in the market relative to the others. Nevertheless, horizontal competition among the chains on a price basis may not be as intense in selling beef as it could be. The data suggest that gross margins of Los Angeles chains at times are exceptionally high and that retail sales prices are maintained when prices of steers and beef carcasses drop. In early 1957, when wholesale prices were dropping sharply, gross margins of chain retailers in Los Angeles rose to about 40 percent of the consumer's retail dollar from an average level of about 30 percent in the fall of 1956. The chains apparently were attempting to recover in 1957 from what they considered to be a relatively low retail margin situation in earlier years.

Discussions with retail chain buyers indicated that in early 1957 each chain waited for his competitor to lower his price structure. There were a few more beef sales and specials, but few of the larger chains altered their basic price structures to correspond with the new lower level of wholesale prices. One possible reason for this is that most of the retailers expected wholesale prices to begin rising sharply in March, which they did. For the year as a whole, gross margins of the Los Angeles chains averaged about 35 percent of the consumer's retail dollar, compared with 30 percent in the North Central region and 26 percent in the Northeast. Gross margins of Los Angeles chains dropped to about 34 percent in 1958, but this was considerably higher than in 1954-56.

Another possibility is that 1957 marked the beginning of a new era in retail competition on beef. For several years before 1957, beef was considered by retailers to be a principal area of competition, use of beef as a loss leader was common, and gross margins on beef were held down in the face of sharply rising costs of retailing. It became clear about this time that numbers of slaughter cattle on farms were dropping and would remain low for several years, and that beef prices would rise and remain relatively high. At the same time, broiler prices were dropping, and severe retail price reductions on broilers became common. It is possible that beef margins data shown here indicate simply that (1) retailers have shifted to broilers in recent years as a principal area of

competition, and (2) Los Angeles retailers were among the first to adjust margins on beef to reflect long-accumulating increases in labor costs and other costs of retailing.

Relatively light price competition at times among the chains and the increased retailer margins apparently do not greatly affect packers' margins. Packers' gross slaughtering margins are highest when prices are relatively low. With chain retailers' margins dropping relatively little or actually rising, and packers' margins rising with reductions in price levels, cattle producers frequently take the full effect of short-term seasonal increases in marketings or reductions in consumer demand. If marketing margins remained constant, a change in retail prices would cause producer prices to change by the same amount. In percentage terms, of course, the change in producer prices would be much greater even in this situation. But when margins increase when prices fall, the change in absolute dollars is greater at the producer or primary market level than at retail, and in percentage terms the difference is exceptionally large. Alternatively, of course, producers benefit at the expense of packers when prices are rising, because at such times producer prices rise more in absolute terms and percentagewise than do wholesale prices.

Failure of retail prices and margins to reflect market conditions impedes and disturbs the flow of the product through the marketing system at a critical time, increases the total per unit cost of marketing, and, therefore, represents inefficiency in marketing. In addition, it distorts consumers' price signals as these signals move through the communications system to packers and producers. Accordingly, more intense competition among the chains on a price basis probably would reduce costs of marketing beef in Los Angeles and improve pricing efficiency in the market.

Vertical competition between the chains and their packer suppliers appears intense, but, as indicated earlier, the contestants are not evenly matched. If this results in lower prices to packers than is justified by supply-demand relationships and services rendered, pricing efficiency is adversely affected because producers and others receive some erroneous price signals. If it results in higher costs, marketing is operationally less efficient. For instance, practices of most of the chains whereby packers are required to provide cooler storage capacity and delivery services to individual retail stores appear to be a possible source of inefficiency resulting from the competitive situation. More chainstore meat warehouses, delivery in truckload lots to these warehouses, and orderly distribution from the warehouses to stores might be more efficient than direct distribution by packers, even though warehouse operation would require one additional handling. At present, each packer delivers beef to individual stores of each of his chainstore customers. This means that trucks of several packers frequently are simultaneously engaged in delivering to stores of one chain. A truck of one packer may be delivering one or a few carcasses to the store of a chain at a particular location, while a few blocks distant the truck of another packer is delivering beef to another store of the same chain.

Continued pressure by the chains, as indicated earlier, probably has forced many packers to become operationally more efficient. In a longer term sense, however, considerable waste of resources and inefficiency could result if the competitive pressure results in profit rates for packers that vary widely through time and prevent them from accumulating sufficient capital to take care of normal

depreciation and obsolescence and, at the same time, make investments which would improve their operational efficiency. A variety of sources indicated that many Los Angeles packers were in precarious financial situation during 1957 and 1958. In a long-term sense, therefore, marketing costs on beef in Los Angeles probably would be more nearly minimized if the packers and retail chains in that market were more nearly equal in bargaining power and competitive strength.

Implications of Other Findings with Regard to Marketing Efficiency

Several additional sources of operational and pricing inefficiency were apparent in the Los Angeles market for beef. Two of these were (1) factors contributing to the uneven flow of slaughter cattle and beef through marketing channels, and (2) additional factors contributing to a high degree of uncertainty in buying and selling, including failure of packers and others to establish adequate accounting systems and lack of adequate information on supplies, prices, and supply requirements at various points in the marketing system.

Behind these factors is another which intensifies effects of those mentioned and increases the need for closer coordination in the Los Angeles marketing system for beef. This is the circumstance of location. Because it is far removed from other principal producing or consuming centers, the Los Angeles market has developed its own supply area, but, in turn, it is expected to handle the supply of beef, large or small, that is produced in the area. In earlier years, before the development of a commercial cattle feeding industry in the West, most of the steers available to Los Angeles packers were "two-way" cattle in that they either could be sold locally for slaughter or shipped to midwestern markets for additional feeding and fattening by producer-feeders. Steers from feedlots in the Southwest, however, are essentially "one-way" cattle. Most must go West to packers in California. But when available supplies are large and prices drop below levels justified by prices in eastern markets, the Los Angeles market cannot easily and quickly adjust because it does not benefit, as do the eastern markets, from the moderating influence that shipments to other markets provide. On the other hand, when marketings from feedlots in the Southwest are unusually light, in comparison with other supply areas, there are perhaps too many moderating influences. When prices rise relatively in Los Angeles, packers in northern California, at Denver, in Texas, and in midwestern markets increase their shipments to Los Angeles. Thus, adjustments in supplies and prices at Los Angeles are made quickly and effectively when locally produced supplies drop and prices rise, but the market must adjust by itself when local supplies increase and prices drop.

Uneven Marketing and Inefficiency

Factors contributing to the uneven flow of slaughter steers and carcass beef through distribution channels in Los Angeles are (1) cyclical and seasonal changes in available supplies of high-quality slaughter cattle and in marketings from feedlots, (2) large shifts from year to year in the seasonal pattern of marketings from feedlots, (3) variations from week to week in the volume of beef slaughtered in the area, and wider variations in carcasses purchased from packers by the retail food chains, and (4) inability of most packers to adjust adequately to these conditions.

Variations in marketings from feedlots.--Marketings from feedlots in the Southwest usually are highest in the first and third quarters of the year, but there is considerable variation from year to year in this pattern and in the changes from one quarter of the year to another (fig. 19). This variation, together with specialization among packers on high-quality beef for fresh consumption, frequently results in (1) alternate periods of light and exceptionally strong competition among packers for cattle that meet retail chain specifications, and (2) underutilization of slaughtering facilities in Los Angeles when slaughter cattle are scarce and prices are high. At the same time, wholesalers or chains may be importing carcass beef from other areas. At other times, when southwestern feedlot cattle are in heavy supply and prices are low, available slaughtering and distributing facilities and services may be heavily burdened. These situations represent inefficiency that could be moderated by reducing seasonal variation in feedlot marketings. There is little evidence, however, of reductions in seasonality of feedlot marketings in recent years.

The shifts from year to year in feedlot marketings introduce a considerable degree of uncertainty into the marketing process. This uncertainty, in turn, frequently results in inefficient pricing as well as higher costs per unit of beef marketed.

Variations in Slaughter and in Purchases by Chain Retailers.--Cattle slaughter varies less from week to week in the Los Angeles market than in other principal slaughter areas. Wide variations occur from week to week, however, in purchases of beef from packers by the retail food chains. The chains tend to increase and decrease their purchases uniformly. Variations in these purchases are related in some manner to (1) week-to-week variations in the volume of local slaughter, and (2) the frequency and extent of price specials on beef. But whether or not the variation in carcass purchases by chains is a disrupting influence in the market depends to a large extent on the direction of cause and effect among these factors. Some indications point to price specials and variations in chain purchases as causes of the variations in slaughter, but others indicate the opposite.

Chain retailers frequently provide the market with a strong foundation of support in the form of immediate buying power, and they sometimes bolster prices at all levels of the market. Seasonal variations in volumes of beef purchased by chains frequently tend to offset seasonal variations in marketings from feedlots and in slaughter. Price specials on beef during periods of low prices and heavy supply tend to increase the movement of beef into consumption channels and may increase returns to producers. Thus, it probably can be said that price specials and variations in purchases by Los Angeles chains result, for the most part, in a more efficient and orderly situation in the distribution of beef in that market. Sometimes, however, retail price specials and variations in chain purchases appear to be disequilibrating forces which obscure the basic forces affecting prices, tend to keep packers off balance, and increase marketing costs. The chains sometimes schedule price specials on beef even though beef prices are relatively high and supplies are scarce, in order to provide consumers with some week-to-week variation in specials. At other times, they reduce their purchases so sharply after buying heavily that packers are misled and left with their coolers full of deteriorating beef carcasses, packer purchases of live cattle are sharply curtailed, and producer prices are affected. The chains, accordingly, might reduce marketing costs and packers' losses, and thereby derive cost

advantages themselves, by attempting to reduce week-to-week variations in their purchases and sales that are not closely tied to or correlated with variations in the volume of local slaughter.

Packers' limitations in adjusting to variations in volume.--To compete successfully in selling beef on a large-volume specification basis, many packers in Los Angeles specialize. But the specialized packers are the ones that are particularly vulnerable to variations in the availability of slaughter cattle that satisfy retailer specifications and to variations in their sales volumes. They are faced with a dilemma. To introduce flexibility through diversifying their operations by slaughtering an additional species or two, they must increase their average unit costs of doing business. But to remain specialized in the handling of carcass beef leaves them subject to some serious risks. Competition for chainstore volume prevents individual packers from curtailing services, such as storage and delivery, offered to chains.

Adoption of breaking or processing functions by specialized packers is a middle course which many Los Angeles packers recently have elected to follow in order to introduce some flexibility into their operations. With an increasing demand for wholesale cuts relative to carcasses, some of these enterprises appear successful. But, in adding these functions, the packers encounter stiff competition from specialized beef breakers and processors. Breakers, for instance, have outlets for all types of cuts, most of their ribs and rounds going to jobbers for distribution to the restaurant trade and most of their chucks and other front-quarter beef moving to retailers. A packer can easily find himself in the uncomfortable situation of having a large number of orders on hand for a particular cut of beef, but few or none for the others.

The ability of Los Angeles packers to adjust to changes in available supplies of beef, prices, and retailers' purchases would be greatly improved if more marketing information were available to them. At present, they receive little information on changes in available supplies of slaughter cattle, total slaughter by grades, changes in chainstore purchases, and other factors that are necessary to rapid and appropriate adjustments in a dynamic market situation.

Additional Factors Contributing to Uncertainty

Inadequacy of the information that packers and other suppliers have on their own cost structures and on supplies, prices, and supply requirements adds to uncertainty in marketing beef. Uncertainty directly affects the efficiency of prices in allocating production and marketing resources and prevents firms from adjusting to achieve increased operational efficiency.

Packers' accounting systems.--Few packers maintain cost accounts sufficiently detailed for efficient use on a day-to-day basis in making decisions. Packers usually have a rough idea whether or not they are making profits or sustaining losses. This, however, is about all that their records tell most of them. Many cannot determine whether they are making more or less in (1) handling one type of beef than another, (2) buying cattle at one location rather than another, (3) selling to one type of buyer rather than another, or (4) providing one type of service or a different one. Some cannot adequately separate costs of slaughtering two different species. Similarly, costs of procurement, slaughtering, storage, and delivery frequently are mingled in books of account. Few keep separate accounts of costs and prices associated with the various byproducts.

Los Angeles packers would benefit greatly by adopting a uniform accounting system and by encouraging a public or private economic research agency to analyze their accounting records on a continuing basis. This could be done through one of the packers' trade organizations. Analysis of accounting data derived from a uniform accounting system would yield valuable guides to improvements in efficiency and set the stage for more detailed economic-engineering cost studies. For some packers, this service might mean the difference between bankruptcy and survival.

Marketing information.--Market news reports currently are issued on slaughter cattle prices at Los Angeles, Phoenix, El Centro, Visalia, and Stockton. Additional price information of this nature, however, is required. Data show that relatively few fed cattle are shipped to the Los Angeles terminal market and that prices on high-quality cattle at this market are relatively low and unrepresentative. Relatively little market news information is obtained on sales at the many feedlots within or near Los Angeles County and these feedlots are contacted infrequently.

Wholesale carcass prices are reported by the Market News Service on a grade and weight basis at Los Angeles, but the study indicates that this report probably could be improved. The range of prices reported is wide and the prices as well as the range probably are not always interpreted properly. Marketing firms using the reports should understand that the lower limits of the reported price ranges represent sales to large-volume accounts, while the upper limits represent small-volume sales where delivery and other services are required. In addition, within-grade differences between lower limit price quotations cannot always be attributed entirely to carcass weight differences as is done in the wholesale market report. These price differences result from a combination of factors. In the Good grade and to a certain extent in other grades, they include price differences associated with differences in quality within the grade. In addition, price differences among large-volume buyers--chains, wholesalers, and jobbers--may be included.

Recent changes in the Los Angeles wholesale market report providing for wholesale carcass prices on a 50-pound rather than a 100-pound weight basis represented an improvement. After the change, prices were reported on a more detailed basis, but the change tended to overemphasize the weight factor even more. Weight is only one of many factors affecting within-grade prices. Some means should be devised to report the influence of these other factors or, at least, to indicate that not all of the price difference should be attributed to weight, as implied.

Additional types of reports on supply, demand, or prices would improve pricing efficiency of beef in Los Angeles. This is an area in which a retail sales price report appears feasible. Most of the chains follow a uniform retail sales pricing policy on beef among their stores. Choice grade prices could be collected in representative stores of the chains rather easily and weighted into a composite carcass retail value. Another alternative would be to obtain price lists from each of the chains' headquarters. Retail prices, together with wholesale prices, would provide the basis for another report, that is, a continuing report on retail chainstore margins.

The California Cattle Feeders Association issues a report on a fee basis showing numbers of cattle moving to and from particular feedlots and numbers of

cattle on feed in these lots. Either that report should be improved by expanding coverage and by including some additional comparisons and analysis of changes, or it should be supplemented with a more detailed report by the Crop and Livestock Reporting Service. This would reduce some of the uncertainty deriving from cyclical and seasonal changes in marketings and from year-to-year shifts in the seasonal pattern. The Southwest is a distinct supply area, only loosely linked in an economic way to supply-demand conditions in the Corn Belt; it therefore needs special consideration.

Information on the daily volume of slaughter by grade and on the total supply of carcass beef for sale in Los Angeles County packers' coolers would benefit all segments of the market. A weekly report on supplies available could be issued, and could include information on inshipments of beef from other areas. In addition, a market report showing weekly variations in chainstore purchases of beef possibly could be developed. Such a report would be helpful to packers and might aid the chains also if it tended to increase the predictability of chain buying activity.

Implications of Findings with Regard to Grading

The Federal grading of beef has tended to improve both operational and pricing efficiency in the Los Angeles market. Reports on prices in that market would be meaningless in the absence of a uniform grading system. By providing a uniform and universal language, the grades improve the ease and accuracy of supply and price communications throughout the market, from consumer to producer. Thus, they reduce uncertainty and increase the probability that each unit of beef entering the Los Angeles market will be channeled to its best and highest priced use. ^{51/} These advantages, although intangible, should not be overlooked.

Uniform grading standards have improved operational efficiency by tending to reduce marketing costs at each point in the distribution process. Grades improve the ability of packers to complete buying and selling arrangements by telephone, increase the geographic range of packers' operations, and provide them with basic information necessary for merchandising and for making decisions leading to cost reductions. They increase competition by permitting the smaller independent packers to compete on an equal basis with private-brand packers. This, in turn, forces cost reductions. In serving as a substitute for proprietary brands of retail food chains, the grades aid the packers in maintaining their independence because, in the absence of Federal grades, the chains probably would develop proprietary brands and more detailed specifications.

Use of the Federal grades for beef has aided Los Angeles chains in their efforts to create a standardized quality image in the minds of consumers. This, in turn, probably has increased demand for beef relative to other meats. Grades also reduce procurement costs of chains and permit them to buy from a larger number of more widely scattered packers.

Producers in the Southwest have benefited both directly and indirectly. Increased competition among packers for cattle has forced them to pass some of the savings they have derived from grading back to producers in the form of

^{51/} See publication on economic effects of U. S. grades for beef by Williams, Bowen, and Genovese (footnote 1).

higher prices. Producer prices and returns also have been affected favorably by the increased consumption of beef and by the more orderly and more efficient distribution of beef through marketing channels that has resulted from grading.

Analytical results of the study show, however, that wholesale market news prices, though highly accurate, must be used with caution in analyzing the effects of grading. A gap between reported prices of two grades does not mean that the grades are producing "unrealistic" prices. Instead, they permit more realistic and meaningful pricing by segregating the supply into quality groups and permitting prices to reflect differences in supply or demand conditions among the grades. Nor does the fact that wholesale carcass prices are reported on a grade-weight basis mean that buyers are not willing to pay for higher quality within the grade. It means only that these premiums are obscured. Price differences between grades in Los Angeles are significantly larger than price differences within grades, but it must be recognized that any system of quality classification, whether public or private, has a tendency to reduce price variation within each grade.

Price premiums received by Los Angeles packers for higher quality beef in the Choice grade were small. However, relatively little top Choice and only slightly more average Choice beef was found in the Los Angeles market. With nearly all of the Choice grade beef falling into the low third category, relatively little quality variation within the Choice grade was possible. It is not surprising, therefore, that relatively little of the Choice grade price variation could be attributed to quality differences within the grade. In addition, the findings show that the premiums which buyers are willing to pay for quality usually are more than offset in the Choice grade by discounts for weight. Most Los Angeles retailers want lightweight carcasses that are high in quality. As this is a difficult combination to supply in volume, they are forced to compromise, but they will sacrifice quality in the grade before compromising on weight. This explains why (1) most Choice grade beef coming to this market falls into the low Choice category, and (2) buyers frequently pay lower prices for top Choice than for low Choice beef--they are heavily discounting weight on the top Choice carcasses.

The situation within the Good grade is quite different. Price differences associated with differences in quality in this grade proved relatively large, whereas weight apparently was a less important factor. This is reasonable because supplies of each one-third grade category of Good were relatively large, cuts from top Good carcasses often qualified for Choice or could be mixed successfully with Choice in display cases, and weights of relatively more Good grade than Choice grade carcasses fell within retailer specifications. Waste and trim on these carcasses is a less important factor than on Choice.

Weight, in the Choice grade particularly, apparently represents economically important quality attributes that fall outside the scope of the present Federal grade standards for beef. These attributes should be considered because they can obscure price-quality differentials, introduce confusion, and prevent the grades from allocating production and marketing resources as efficiently as might be desired.

Concluding Comments

There were indications in this study that the meatpacking industry in Los Angeles may go through some additional changes within the next few years. The less efficient firms are likely to drop out and be replaced by larger, more efficient plants. Numbers of packers may drop and the average size and volume of remaining plants therefore may become larger. This could improve the competitive bargaining position of the packers relative to the chains so that the two would be about evenly matched. If this, in turn, resulted in relatively higher wholesale prices at Los Angeles, it also could have the effect of causing many of the chains to seek elsewhere for carcass beef. To many of the chains this is a definite possibility, but they are not greatly concerned because they feel that they can buy beef from packers at Denver or elsewhere about as easily as they now buy it from Los Angeles packers. These possibilities deserve the careful attention of producers and feedlot operators in the Southwest. A severe reduction in the volume of slaughter in southern California would have serious repercussions on the entire cattle feeding industry of the Southwest.



