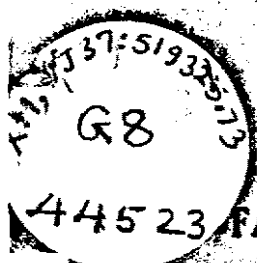


# TERMINAL FRUIT AUCTIONS

## as Marketing Agencies for Farmers' Cooperatives

by KELSEY B. GARDNER



FARM CREDIT ADMINISTRATION

Research and Service Division

WASHINGTON, D. C.

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NOVEMBER 1938

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# Terminal Fruit Auctions

*as Marketing Agencies  
for Farmers' Cooperatives*

By Kelsey B. Gardner  
*Principal Agricultural Economist*



FARM CREDIT ADMINISTRATION  
Cooperative Research and Service Division  
WASHINGTON, D. C.

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## Summary and Conclusions

**AUCTION** sales of fruits and vegetables, exclusive of bananas, by 14 companies in 12 markets during 1937 totaled 102,128 cars, with a value of \$151,727,822. Carloads of citrus fruit amounted to 61.9 percent of the total number of cars sold at auction; deciduous fruits 29.9 percent, pineapples 3 percent; and melons, vegetables, and miscellaneous products 5.2 percent.

Cooperative associations are important contributors to the business of auction companies. For the year 1934 at least 45 percent of the total carloads of all fruits and vegetables, exclusive of bananas, sold through terminal auctions was handled for cooperative associations. For the same year, over 62 percent of carlot auction sales of citrus fruit was for cooperative associations.

An analysis of auction sales of Western boxed apples in 7 markets during the 1934-35 crop-movement season showed that about 43 percent was cooperatively packed and 57 percent was packed by proprietary concerns. In each case, slightly over one-half of the quantity was sold for the account of the packer. Apple cooperatives and private sellers thus exercised no control over the offerings of substantial portions of their respective packs which were sold at auction for the account of operators other than the packer.

Auctions are important parts of the distribution machinery in large markets. Almost four-fifths of the carlot unloads of citrus fruit in auction markets were sold through terminal auction companies. Variations in the percentage of total carlot unloads of citrus fruit sold at auction in each of the markets were rather wide. The range in 1937 was from 47 percent for Baltimore and 52 percent for Pittsburgh to 91 percent for New York and 92 percent for Philadelphia.

The proportion of deciduous fruit sold at auction, while less than for citrus fruit, amounted to an average of 48 percent for all markets. Citrus and deciduous fruits together totaled over 90 percent of auction sales for the 4 years 1934-37. The combined carlot sales at auction of these two groups of fruits amounted to about 65 percent of their total carlot unloads in auction markets for the years 1930 and 1934-37. The degree of market coverage obtained through auctions, when measured by the percentage of total carlot unloads in auction markets of citrus and deciduous fruits sold at auction, showed a rather wide range for 12 auction markets in 1937. For the four largest markets, Boston, Chicago, New York and Philadelphia, the combined percentages for citrus and deciduous fruits were 60, 55, 83, and 80, respectively.

Terminal auctions are important sources of supply for out-of-town buyers. Direct billings by auction companies to purchasers with business addresses 25 or more miles distant from auction markets in 1934-35, when expressed as percentages of total auction business, ranged from 3.9 for St. Louis to 30.1 for Cincinnati. Boston, New York, and Philadelphia figures were 18.5, 4.5, and 9.7 percent, respectively. Chicago had no out-of-town billings.

One of the primary questions of concern to cooperative sales managements relates to the validity of the use of the auction price of a commodity as a basis for price quotations in private-sale transactions. On the basis of studies restricted primarily to California Valencia oranges, the conclusion was reached that monthly and weekly auction prices constituted reasonably satisfactory measures of price both at auction and at private sale. Variations in weekly prices for this commodity between auction markets and private-sale markets suggested that auction prices are not final and complete indicators of the price at which total offerings of this commodity can be sold in all markets. Factors such as variations in demand and supply conditions in individual markets, differentials in price for various brands, grades, and sizes, condition and quality of fruit, and the effect at times upon auction average prices of off-condition shipments or cars diverted to auction from other markets, must be taken into account in determining price quotations in private-sale transactions.

Inquiry into factors causing variation in monthly auction prices of California Valencia oranges at New York showed that control of supplies offered at auction in this market was necessary if price fluctuations were to be held within reasonable limits. The necessity for this control in both auction and private-sale markets is recognized and exercised by capable sales managers insofar as practicable in order that violent price fluctuations may be avoided. The necessity for control is particularly important in the case of auctions because of the extent to which auction prices are employed as a basis for price quotations in private-sale transactions.

With limited exceptions, monthly prices in 11 auctions for California Valencia oranges and lemons and for California Navel oranges in 10 auctions over a period of approximately 8 years, showed a close relationship when changes in price from month to month were examined.

An exact comparison of sales results obtained for a commodity sold through both auction and private-sale channels cannot be made except on the basis of the same grade, size, and condition of fruit. Unless data on condition and related factors are collected at the time sale is made, it is not possible to make allowance for possible discounted prices on diverted cars or for any variation in condition between lots of the same grade and size sold at auction and at private sale. However, an indication of the relationship may be observed

from an analysis for one season of weekly prices of California Valencia oranges packed under the Sunkist trade-mark and sold at auction and at private sale. This analysis showed a reasonably close agreement when comparisons were made on the basis of individual sizes.

Terminal auction buyers are for the most part jobbers. This type of purchaser either directly or through buying brokers accounted for 70.5 percent of total sales made by 12 auction companies during sample weeks in 1934 and 1935. Auction billings direct to chain stores and buying brokers were 9.5 and 7.9 percent respectively for the same periods. Similar percentages for motor truck jobbers, specialty fruit and vegetable stores, and independent retail stores were 3.3, 2.5, and 2.3 percent.

The majority of auction buyers purchased a number of commodities in order to take full advantage of the time and effort required to inspect auction offerings and to attend the sales. About 60 percent of the dollar sales of five different commodities handled by 10 auction companies for one week in 1935 was made to buyers who purchased all five commodities, which in turn comprised 91.5 percent of the total sales of all commodities for the 10 auction companies.

Auction buyers, for the most part, did not purchase the equivalent of a carload when each buyer's weekly purchases of important commodities were considered separately. About 90 percent of the buyers of California Navel oranges during 1 week purchased less than a single carload of this commodity. Similar analyses showed that over 82 percent of the California Valencia orange buyers and all of the buyers of Northwestern Winesap apples purchased at a rate of less than one carload of each commodity per week.

Purchasers at auction, for the most part, bought a limited number of sizes of oranges and apples. Sixty-five percent of the buyers of California Navel oranges each bought four sizes or less. Similar figures for California Valencia oranges and Northwestern boxed Winesap apples were 53 and 92 percent.

The dominant portion of auction buyers consisted of less-than-carload purchasers. The limited number of sizes of a single commodity purchased by these buyers emphasized the point that, for the most part, buyers were restricted as to the number of sizes which they needed to meet the requirements of their trade. From the standpoint of the shipper, private or cooperative, it is apparent that the auction outlet enables him to reach a group of buyers which could not be served directly so long as the sales unit was the carload.

Further study of the buying performance of auction purchasers showed that generally they bought regularly and frequently during 4 sample weeks in 1934 and 1935.

Analysis of the relative importance of receivers showed that one cooperative association, acting as an auction receiver for its own

members' products and also for the commodities of another cooperative association, contributed between 45.3 and 64.5 percent of the total dollar volume of 9 individual auction companies.

The trend of auction company ownership is toward trade control. Complaints against operating practices were found for the most part among the trade in some but not all of the smaller markets. No proof of the validity of these objections was obtainable. The fact that the opinions existed should be adequate reason for correcting the situation by a wider distribution of ownership or other remedial steps.

Cooperative marketing associations have not become owners of stock in auction companies. There are important reasons why cooperatives should not embark on such a program. Management of jointly controlled enterprises in terminal markets would involve important and difficult problems of cooperative business administration. Problems in the field of extension and supervision of credit would also be involved. The extent of support of a cooperatively owned auction by private or nonstockholding shippers would be a problem of first significance.

The attitudes of auction buyers toward the auction method of purchasing were significant. Only 12 percent of the jobbers interviewed showed an unfavorable attitude. Sixty-one percent of the chain-store buyers, however, exhibited an unfavorable attitude. Jobbing buyers stressed such favorable viewpoints as "purchase prices known," "size and quality inspections made readily," while chain-store buyers gave first importance to the fact that "required sizes were available." Principal objections of those jobbers who showed unfavorable attitudes toward the auctions were "speculative profits possible through carlot purchasing," "adjustments for poor quality more readily obtained on products bought at private sale" and "auction sales units too small." The most important objections of chain buyers were "carlot purchasing better (no reason stated)," "auction supply not dependable for sales purposes and purchase price known to competitors," and "savings effected in handling expenses or lower prices at private sale."

One of the most pressing problems confronting cooperative sales managements using the auction as a sales outlet is whether commodities should be sold at private sale to large-scale purchasers in markets where other buyers are required to obtain their supplies of the same association's commodities through auction channels. No definite and completely satisfactory solution to this problem appears to exist. Important sellers in some instances limit their sales activities to a single method in each market. Some are supporters of the auction, others are not. Some large-scale purchasers, including chain stores, obtain their supplies through auction channels. Others have used private-sale transactions as a means of acquiring commodities also sold at auction. Important sellers and buyers are not in agreement



upon any single method of purchase and sale. Significant points which should be carefully weighed in connection with the adoption or use of sales policies which are based on selling in carlots to large-scale purchasers in markets where other buyers are required to obtain their requirements through auction channels may be summarized as follows:

1. Citrus and deciduous fruits comprise the principal portion of the auction business. Almost 80 percent of the total carlot unloads of citrus fruit in auction markets and 47 percent of the deciduous fruit unloads are sold at auction in the cities where auctions are located.

2. If sales in carlots are to be made to all large-scale purchasers in auction markets, the probable effects of the withdrawal of the larger buyers upon the auctions as indicators of price should be carefully weighed.

3. Present pricing policies of large-scale buyers of some auction commodities acquired at private sale in auction markets leave price to be determined at the time of delivery on the basis of auction price levels existing at the time. If the present value of the auction price of a commodity were reduced by removal of important buying support at auction, some substitute pricing arrangement would be necessary. Furthermore, the necessity for more accurate determination of supplies to be offered at auction would be required in order to avoid unduly wide fluctuations in price. This determination would be made difficult because of uncertainties regarding quantities moving at private sale to large purchasers.

4. If increased quantities of a commodity now sold at auction are to be diverted through private sale, sellers must be prepared to assume increased credit risks.

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## TERMINAL FRUIT AUCTIONS

### *As Marketing Agencies for Farmers' Cooperatives*

**P**OLICIES of cooperative associations engaged in the marketing of fruits and vegetables show great variation in the use of terminal market auctions as agencies of distribution. These differences in attitude may extend even to associations handling the same commodity, as organizations engaged in marketing the same products often have different viewpoints toward the auction method of selling. Citrus-marketing associations afford an example. Some of the organizations in this commodity field sell substantial portions of their total offerings at auction, while other associations operating in the same producing areas and under similar conditions move only limited quantities in this manner. In one case, the terminal auction is regarded as a regular outlet to be used consistently as a method of distribution; the other policy reflects irregular use of the auction, for emergency purposes only.

These differences of opinion among cooperatives regarding use of terminal auctions, combined with the fact that some of the auctions draw the greater portions of their business from cooperative sources, present an important question in the field of merchandising research. These considerations were important factors leading to a decision to undertake the project, following a request from the California Fruit Growers Exchange. It was recognized that such a study would deal with matters of concern not only to cooperative associations, but also to other distribution agencies engaged in the marketing of fruits and vegetables.

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NOTE.—At the time this study was made research and service work with agricultural cooperative associations was carried on by the Cooperative Division of the Farm Credit Administration.

Acknowledgment is made of the assistance rendered by Charles W. Hauck, G. N. Motts, Whitton Powell, and O. G. Strauss in the collection of information from auction companies and other trade sources in terminal markets.

George W. Harvey, formerly of the staff of the Economics Subdivision, Finance and Research Division of the Farm Credit Administration, participated actively and also in an advisory capacity in connection with certain phases of the analysis of factors determining auction prices of California Valencia oranges at New York and Chicago. The assistance of H. E. Golden, formerly of the same staff, is also acknowledged. Credit is due Ruthia K. Owens, Dorothy T. Sheehy and Anna L. Gessner for assistance in preparing the statistical data.

## Purpose and Method of Study

**T**HERE are now available studies in which the functions and services of terminal auctions for the sale of fruits and vegetables are fully described (5) (6).<sup>1</sup> There is also much other published material in well-known marketing textbooks describing terminal auctions and the problems connected with marketing fruits and vegetables through them. It is the purpose of this study to subject the auction method of selling to a somewhat more detailed analysis than has heretofore been attempted, but not to describe auction operations, services, and functions in detail.

Sales managers of fruit and vegetable associations find it necessary to study continuously their sales problems and to examine critically their sales policies if they are to keep up with changing situations. One problem of sales managers of cooperative associations handling commodities sold at auction and at private sale is that of determining the validity of the use of auction prices as a basis in determining price quotations for use in private-sale transactions. This problem confronts managers of associations making extensive use of the auctions as well as those which do not.

Associations selling exclusively at auction in important markets must face problems brought about through the development of large-scale purchasing organizations affiliated with important chain-store systems. This development has resulted in the movement of significant volumes of various fruits and vegetables, including those sold at auction, to these buying groups through channels other than the auction in auction markets.

Other problems arise in the field of membership relations of cooperative associations because of the lack of detailed information regarding the auction method of sale. Through such information, members of cooperatives would be able to gain a more complete understanding of this method of marketing and its place in the entire distribution structure.

This study was undertaken for the purpose of developing information which would be of assistance to members and managements of cooperatives in appraising the auction as an agency for the marketing of fruits and vegetables. It was necessary to limit the study to some of the more important problems of concern to cooperative associations, which could be dealt with from a statistical standpoint. The following objectives for this study were set up after consideration of questions raised by cooperative groups:

1. To examine the relationship existing between auction and private-sale prices for the same commodity.

<sup>1</sup> Numbers in parentheses are references to the literature cited on page 90.

2. To determine the extent to which sales through terminal auctions meet the requirements of the trade in certain markets.

3. To analyze the operations of representative auction companies with particular reference to the classes of purchasers buying at auction, the relative importance of each class, the number of commodities purchased by individual buyers, frequency of purchase, auction company ownership, relative importance of receivers, and the attitude of the buying trade toward the auction method of sale.

4. To give consideration to factors bearing on the question of whether large-scale purchasers can be adequately served by present auction sales methods.

This list of objectives does not include a number of important problems, such as the following: (1) comparative costs of selling in terminal markets at auction and at private sale, (2) effect of selling the same commodities at both private sale and at auction in the same markets, (3) comparative returns for products of the same variety, size, grade, and quality sold at the same time through the same auction, (4) problems relating to display sheds, piers, and other physical facilities used by auctions, and (5) practices and charges which have been developed as a result of labor organization activities. Desirable as it would have been to include these and many other questions which will occur readily to one interested in the subject, it was not practicable to include them in the present study.

This study, dealing with some of the operating phases of terminal auction companies, was made possible through the active cooperation of the auction companies. Shipping-point auctions and auction operations exclusively concerned with the selling of bananas have not been included.

Field work in connection with this study fell into two primary divisions. One of these was the obtaining of data from cooperative associations whose records were believed to be complete enough to furnish a basis for comparison of prices of commodities sold at auction and at private sale and for other price studies which were necessary in view of the factors selected for study.

The larger portion of the field work, however, was performed at the offices of the 12 terminal auction companies in the following 10 markets: Baltimore, Boston (two companies), Chicago, Cincinnati, Cleveland, Detroit, New York (two companies), Philadelphia, Pittsburgh, and St. Louis. In addition, data relative to volumes of business were obtained through cooperative contacts from auction companies operating in Minneapolis and St. Paul, Minn., and New Orleans, La.

In the offices of auction companies visited by representatives of the Cooperative Division, a large volume of material was taken from records relating to individual customers' auction purchases of various

commodities. Size, price, and quantity data were obtained for some of the commodities. Other data related to auction company stockholders, volumes of business transacted by various receivers through the auctions, and other related data. Insofar as practicable, comparable data were obtained from all auction companies. In New York, however, because of the large number of customers and the volume of business transacted, it was necessary to obtain some of the data from the two auction companies operating in this market on bases somewhat different from those used in other markets.

## Auction Functions and Services

CERTAIN fruits and vegetables have been sold at auction in the United States for more than a century. Smyrna raisins, currants, sweet potatoes, Malaga grapes, oranges, and lemons were sold at auction as early as 1827, according to a New York commercial journal. Regular auction sales for fruit were established a few years following the continued importation of Italian lemons (5). The functions and services of present-day auctions in the terminal markets have been well and adequately described in prior publications (6). It will be sufficient for the purposes of this publication to present a rather brief statement outlining representative functions and services usually rendered by terminal auction companies.

### Location of Terminal Auction Companies

Sales of fruits and vegetables at auction are made in important market centers. At the time of this study there were 15 auction companies distributed among 13 markets as follows: Baltimore, Boston (2 companies), Chicago, Cleveland, Cincinnati, Detroit, Minneapolis, New Orleans,<sup>2</sup> New York (2 companies), Philadelphia, Pittsburgh, St. Louis, and St. Paul.<sup>3</sup> Citrus fruit was marketed regularly through 13 of the auction companies. Deciduous fruit was handled by all 15 companies.

### Commodities Sold at Auction

Auction companies of the type included in this study are commonly called "fruit auctions," as fruit represents the greater portion of the commodities sold through them. Adequate supplies, regularity of shipments, and high standards for grading and packing of fruit are factors contributing to the extensive use of terminal auctions by those fruit shippers in position to meet these requirements.

<sup>2</sup> Auction selling at New Orleans was discontinued in December 1936.

<sup>3</sup> In addition, the California Fruit Growers Exchange was operating its own auction for the sale of citrus fruit at Los Angeles.

The number of commodities sold at some auctions is surprisingly large. An analysis made for the year 1930 showed that 56 different fruits and vegetables were sold on the New York auction market during that year (6). Some of these commodities, such as artichokes, olives, and parsley, were sold in limited quantities amounting to but 1 or 2 cars. In 1935 the following percentage distribution, based on the number of carloads sold, was shown for two auction companies:

	<i>Percentage of total carload sales for 2 auction companies<sup>1</sup></i>
Oranges.....	33.7
Bananas.....	16.7
Grapefruit (California, Florida, Isle of Pines, Puerto Rico, and Texas).....	7.5
California lemons.....	7.0
Juice grapes.....	7.0
Table grapes.....	6.4
Apples.....	5.5
Pears.....	5.0
Plums and prunes.....	2.3
Miscellaneous vegetables.....	1.8
Tangerines and satsumas.....	1.7
Pineapples.....	1.6
Melons.....	1.6
Cherries.....	.9
Mixed deciduous fruits.....	.4
Apricots.....	.3
Peaches.....	.3
Nectarines.....	.2
Figs.....	.1
Miscellaneous.....	(?)
Total.....	100.0

<sup>1</sup> One company was located in New York and the other in Philadelphia. The combined tonnage of the two companies for the year 1935 was over 57,000 cars.

<sup>2</sup> Less than .05 percent.

Buyers of all types, desirous of obtaining commodities of widely differing quality, are patrons of the auctions. Commodities of the highest quality and grade are available, as many shippers recognize that high-quality products well graded and packed can be sold advantageously at auction. Successful selling of a commodity at auction requires uniform grading and packing in standardized containers, regularity of offerings during the season, and adequate quantities.

### Receiving and Sampling

Products to be sold at auction are shipped to the market representative of the shipper. This representative may be a salaried employee of the shipping organization, or an agent retained by the shipper on a commission basis or on a definite fee per carload or other physical

unit. The representative makes arrangements for sale by the auction company and acts for the shipper at the sale.

Goods for sale at auction usually arrive by rail at a warehouse owned by the railroad company. In New York, carloads of commodities to be sold at auction on Manhattan Island are ferried from the New Jersey rail terminals to the piers where sale takes place. For commodities arriving by boat, samples are taken and placed for inspection on the piers where unloading of rail receipts takes place.

In some auction markets employees of the auction companies unload the commodities to be sold. Packages are sorted and arranged in orderly rows and tiers known as "lines," according to variety, brand or grade and size (fig. 1). Samples are selected and opened for inspection by buyers. Not all auction companies assume responsibility for handling the goods prior to sale. Important exceptions are found in New York where employees of the carriers unload, sort, and select samples under the general supervision of the receivers.

Sale at auction does not imply a warranty that all of a single line is the same as the open sample. Sale is on an "as is" basis. Buyers usually may open other packages, but must restore them to their original condition after inspection. There are infrequent complaints of receivers "dressing samples," through removal of decayed or otherwise unattractive fruit. It is the aim of auction companies to prevent this practice, to which there are at least two important deterrents; that is, auction company supervision and the fact that buyers offer lower prices for fruit handled by receivers known to engage in this practice.



FIGURE 1.—DISPLAY OF FRUIT TO BE SOLD AT AUCTION.

Packages are arranged in an orderly manner so that the individual "lines" may be readily inspected by buyers and removed after sale has taken place.



### Catalogs.

Printed catalogs are prepared for each sale and are available to buyers when they come to examine the offerings (fig. 2). These



FIGURE 2.—BUYERS INSPECTING FRUIT TO BE SOLD AT AUCTION.

Buyers look over the various offerings before they go to the auction rooms.

catalogs list the receiver's name, variety of fruit, brands, individual lines, and number of packages, as illustrated in figure 3. Each buyer makes notations in his catalogs regarding the lines in which he is interested on the basis of his inspection. The auctioneer uses the catalog as a program for selling. Following the sale, it is common practice for the auction company to prepare a second type of printed catalog showing prices realized. Copies of these are available to shippers (fig. 3).

### Selling

Selling of commodities is at open sale where each line goes to the highest bidder. Selling is subject to definite regulations and practices as to minimum quantities (usually 20 to 50 packages, depending on the commodity, size of package, and other considerations), systematic rotation of the order in which offerings of the various receivers are sold, restrictions as to the division of a buyer's purchases with other buyers, and numerous other details designed to maintain competition between buyers and general fairness in the conduct of the auction. Selling proceeds at a rapid rate, necessary if large volumes of products are to be moved fast enough to conserve buyers' time and maintain their interest (fig. 4).

The usual selling charges range between 1½ and 2 percent of the sales value. There are usually additional charges by carriers or auction companies, for unloading and other physical handling charges

incurred during the movement of commodities through the auction shed. These charges show material variation among the several auction companies and according to commodity and size of container. The usual range is from less than 1 cent to 5 cents per package. Sometimes, charges of this nature are assessed against buyers, and again they are paid by the seller.

After deduction of auction charges and transportation expenses, which are paid directly to the carrier, the auction company makes returns to the seller customarily within 24 to 48 hours after sale. Full payment for broken boxes which cannot be restored to prime

14		14	
LINE	MARK	DESCRIPTION	PRICE
Monday, June 7, 1937			
Citrus Growers Co-op. Ass'n. JOHN JORDAN, Sales Representative			
P F E CAR #1788 Hartford, Conn.			
Refrigeration			
VALENCIA ORANGES			
Lot No. 8486			
135	100	3 Boxes	
136	126	32	
137	150	60	
138	176	83	
139	200	84	
140	220	71	
141	232-238-1	3	
RURAL BRAND			
142	126	48	
143	150	60	
144	176	81	
	A 200	2	
Monday, June 7, 1937			
Citrus Growers Co-op. Ass'n. JOHN JORDAN, Sales Representative			
P F E CAR #1788 Hartford, Conn.			
Refrigeration			
VALENCIA ORANGES			
Lot No. 8486			
135	100	3	95-10
136	126	32	95-15
137	150	60	95-15
138	176	83	95-00
139	200	84	94-65
140	220	71	94-45
141	232-238-1	3	92-90
RURAL BRAND			
142	126	48	94-75
143	150	60	94-55
144	176	81	94-70
	A 200	2	94-25

FIGURE 3.—SALES AND PRICE-REALIZED CATALOGS.

Catalog at left is used during inspection and sale. Price-realized catalog at right, made available to the seller, shows prices obtained.



FIGURE 4.—SELLING FRUIT AT A TERMINAL AUCTION.

An auction room is a busy place during the progress of a sale.

condition is usually made immediately to the shipper; the auction company then collects from the carriers the difference between actual salvage sale value and the price which would have been obtained for the packages in an unbroken condition. This service naturally applies only to those broken packages for which the carriers are ready to assume immediate responsibility.

### Credit and Adjustments

Extension of credit is one of the primary services rendered by auction companies. Accounts are closely supervised in order to hold credit losses to reasonable minimums. Credit extension periods range usually from 7 to 15 days. Definite credit lines are established. Some buyers are required to keep cash deposits with the companies in varying amounts to maintain their lines of credit. Responsibility for the extension of credit rests solely with the auction companies. Price adjustments to buyers purchasing at auction are rarely made, and then only upon authorization by the receiver or shipper representative.

# Volume of Business Handled Through Terminal Auctions

**T**HE VOLUME of fruits and vegetables sold at auction is large. The dollar value in 1937 totaled \$162,272,361 for auction sales of all such commodities, including bananas, handled by terminal auction companies in 12 markets. This value is somewhat less than the total of \$221,058,252 reported by the auction companies in 13 markets for the year 1930 (table 1). Carlot volumes, exclusive of bananas, were 130,300 in 1930 and 102,128 in 1937 (table 2).

## Relative Importance of Individual Terminal Auctions

Bananas were sold by auction companies in Baltimore, New York, and Philadelphia. If these sales are deducted from the sales value figures for 1937, in order to obtain a more uniform basis of comparison for all auctions, a total of \$151,727,822 remains.<sup>4</sup> The relative importance of auction sales in the several auction markets based on the \$151,727,822 value, exclusive of bananas, was as follows: New York, 46.4 percent of the total; Chicago, 11.6 percent; Philadelphia, 11.0 percent; Boston, 9.8 percent; Detroit, 4.3 percent; Cleveland, 4.2 percent; Pittsburgh, 3.4 percent; Cincinnati, 3.3 percent; St. Louis, 3.1 percent; Baltimore, 2.1 percent; Minneapolis and St. Paul (combined), 0.8 percent. The first four markets accounted for 78.8 percent of the total sales made at auction.

In table 2 are shown carlot auction sales of specified commodity groups in auction markets for the years 1930 and 1934-37. Over a period of several years, comparison of relative volumes according to the number of carlots usually presents some difficulties because of variations in production and in the quantities loaded per car from time to time. Changes in freight rates and in minimum weights per car are important factors in bringing about these variations. However, when concurrent comparisons are made between the number of cars sold at auction and the carlot unloads in a particular market, the difficulty referred to is largely eliminated. Such a comparison is shown in table 3.

In examining this comparison, it should be kept in mind that receipts by truck were not included in the carlot-unload figures, which consisted of shipments arriving by rail and boat. Justification for not including truck receipts was in the fact that commodities moving

<sup>4</sup> Banana sales by terminal-auction companies for the year 1937 in these markets were as follows: Baltimore, \$1,473,614; New York, \$6,872,566, and Philadelphia, \$2,196,157.

**TABLE 1.—GROSS SALES VALUE OF DOMESTIC AND FOREIGN FRUITS AND VEGETABLES SOLD THROUGH TERMINAL AUCTIONS IN THE UNITED STATES, 1923, 1930, AND 1934-37<sup>1</sup>**

Market	Gross sales value					
	1923	1930	1934	1935	1936	1937
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Baltimore.....	4, 374, 387	5, 292, 243	4, 196, 382	3, 879, 881	4, 584, 683	4, 697, 758
Boston.....	16, 629, 206	18, 338, 162	13, 256, 293	14, 093, 493	14, 245, 147	14, 850, 476
Chicago.....	14, 045, 431	26, 703, 314	15, 771, 617	15, 193, 661	16, 620, 288	17, 655, 659
Cincinnati.....	3, 753, 442	5, 037, 726	4, 214, 509	3, 653, 398	4, 467, 315	4, 954, 491
Cleveland.....	6, 357, 940	7, 671, 000	4, 941, 993	4, 371, 049	5, 729, 390	6, 437, 719
Detroit.....	<sup>2</sup> 4, 072, 187	8, 097, 426	5, 125, 021	5, 396, 562	5, 955, 118	6, 596, 528
Minneapolis and St. Paul.....	1, 326, 182	1, 746, 544	835, 548	815, 107	1, 108, 418	1, 147, 950
Newark.....	3, 174, 477					
New Orleans <sup>3</sup> .....	<sup>2</sup> 3, 723, 300	3, 251, 545	1, 603, 746	1, 391, 701	700, 000	
New York.....	72, 180, 617	104, 543, 393	69, 713, 886	65, 940, 012	70, 881, 784	77, 193, 350
Philadelphia.....	17, 328, 371	24, 491, 273	15, 832, 217	15, 806, 543	17, 235, 772	18, 820, 403
Pittsburgh.....	6, 115, 403	9, 958, 004	4, 902, 418	4, 915, 004	4, 959, 572	5, 162, 224
St. Louis.....	4, 989, 211	5, 927, 622	4, 846, 344	4, 429, 270	5, 046, 630	4, 746, 803
<b>Total.....</b>	<b>158, 070, 154</b>	<b>221, 058, 252</b>	<b>145, 239, 974</b>	<b>139, 885, 681</b>	<b>151, 534, 117</b>	<b>162, 272, 361</b>

<sup>1</sup> Values include sales amounts for all commodities, including bananas, sold during the calendar year. Data for 1923 and 1930 from U. S. Dept. of Agr. Dept. Cir. 250, p. 7. Data for 1934-37 obtained from auction companies by Cooperative Division.

<sup>2</sup> Estimated.

<sup>3</sup> Discontinued operation December 1936. Figure for 1936 is estimated.

TABLE 2.—AUCTION SALES OF SPECIFIED COMMODITIES AT 13 TERMINAL MARKETS, 1930 AND 1934-37<sup>1</sup>

[In carloads]

Commodity and year	Balti- more	Bos- ton	Chica- go <sup>2</sup>	Cin- cinnati <sup>3</sup>	Cleve- land	De- troit	Minne- apo- lis <sup>4</sup>	New Or- leans <sup>5</sup>	New York <sup>6</sup>	Phila- del- phia	Pitta- burgh	St. Louis	St. Paul <sup>7</sup>	Total
<b>Citrus:</b>														
1930.....	1,376	5,098	7,464	1,862	3,440	2,396		684	22,057	5,900	3,231	2,135		54,643
1934.....	1,447	5,808	6,862	2,228	2,685	2,685		583	25,869	7,878	2,788	2,657		61,490
1935.....	1,484	6,921	7,464	2,121	2,820	3,412		581	27,449	8,310	3,166	2,787		66,515
1936.....	1,546	6,446	7,227	2,344	3,131	3,359		326	26,466	8,182	2,680	2,769		64,476
1937.....	1,331	5,819	6,963	2,478	3,285	3,331			26,805	8,328	2,352	2,514		63,206
<b>Deciduous:<sup>1</sup></b>														
1930.....	925	6,127	7,349	776	1,841	1,882	799	389	31,034	6,234	2,033	1,307	597	61,293
1934.....	548	3,473	4,330	946	751	815	267	145	18,491	3,362	637	915	357	35,037
1935.....	396	3,585	3,708	824	539	544	366	99	15,786	2,893	508	716	229	30,193
1936.....	479	3,200	4,196	905	831	574	524	2	15,298	2,708	608	825	322	30,472
1937.....	494	3,459	3,857	821	765	534	537		15,537	3,008	536	670	353	30,571
<b>Melons, vegetables, and miscellaneous:</b>														
1930.....	37	<sup>8</sup> 123	29	<sup>9</sup> 787	30	18		1,004	6,657	1,740	228	87		10,740
1934.....	55	232	2	63	17	19		835	5,094	99	27			6,443
1935.....	73	181	870	38	6	17		525	4,830	58	52			6,650
1936.....	30	383	1	51	14				4,739	33	65	19		5,335
1937.....	35	346		58	21				4,597	57	213	10		5,337
<b>Pineapples:</b>														
1930.....	71	57	501	( <sup>10</sup> )	199	204		11	1,909	307	226	139		3,624
1934.....		21	154	96	100	78		5	999	49	100	62		1,664
1935.....		17	120	84	79	61		12	1,184	39	84	52		1,732
1936.....		22	220	128	130	94			1,659	55	118	88		2,514
1937.....		39	290	168	193	178			1,797	88	136	125		3,014

<b>Total all commodities:</b>															
1930-----	2, 409	11, 405	15, 343	3, 425	4, 510	4, 500	799	2, 088	61, 657	14, 181	5, 718	3, 668	597	130, 300	
1934-----	2, 050	9, 534	11, 348	3, 333	3, 553	3, 597	267	1, 568	50, 453	11, 388	3, 552	3, 634	357	104, 634	
1935-----	1, 953	10, 704	12, 162	3, 067	3, 444	4, 034	366	1, 217	49, 249	11, 300	3, 810	3, 555	229	105, 090	
1936-----	2, 055	10, 051	11, 644	3, 428	4, 106	4, 027	524	328	48, 162	10, 978	3, 471	3, 701	322	102, 797	
1937-----	1, 860	9, 663	11, 110	3, 525	4, 264	4, 043	537	-----	48, 736	11, 481	3, 237	3, 319	353	102, 128	

<sup>1</sup> All commodities included except bananas. Data for 1930 obtained from table 3, Park, J. W., American Fruit and Vegetable Auctions, U. S. Dept. Agr. Circ. 260, 47 pp., illus., 1932; 1934-37 figures obtained from the auction companies by the Cooperative Division.

<sup>2</sup> 33 cars of salvage merchandise for 1934, 91 cars for 1935, 72 cars for 1936, and 61 cars for 1937 prorated to citrus fruit, deciduous fruit, and melons, vegetables and miscellaneous classifications.

<sup>3</sup> Miscellaneous less than car-lot consignments for 1934-37 not included.

<sup>4</sup> Auction sales at Minneapolis and St. Paul were reported as all deciduous.

<sup>5</sup> Figures for 1936 based on actual data and estimates. Auction discontinued December 1936.

<sup>6</sup> Car-lot figures for 1934-37, for one New York company, were converted from package data.

<sup>7</sup> Small fruits and berries included.

<sup>8</sup> All watermelons.

Some pineapples may be included with the 787 cars shown under melons, vegetables, and miscellaneous.

from production areas by this method of transportation to terminal markets were not sold through terminal auctions. Terminal auction commodities have been limited without known exception to arrivals by boat and rail. Not all commodities shipped by these two methods of transportation are sold at auction, however, as numerous other

TABLE 3.—AUCTION SALES OF CITRUS AND DECIDUOUS FRUIT IN PERCENTAGE OF TOTAL CARLOT UNLOADS, 1930 AND 1934-37<sup>1</sup>

Market	Auction sales in percentage of total carlot unloads of citrus and deciduous fruit														
	Citrus fruit					Deciduous fruit <sup>2</sup>					Total citrus and deciduous fruit				
	1930	1934	1935	1936	1937	1930	1934	1935	1936	1937	1930	1934	1935	1936	1937
Baltimore.....	57	58	55	52	47	39	44	32	45	40	48	54	48	50	45
Boston.....	87	77	81	74	64	69	57	52	53	54	76	68	68	66	60
Chicago <sup>3</sup> .....	86	72	71	72	69	41	42	34	43	40	56	56	52	58	55
Cincinnati <sup>4</sup> .....	97	78	69	76	80	22	28	32	33	36	49	50	52	56	61
Cleveland.....	92	85	84	87	87	43	30	24	35	30	62	61	60	66	64
Detroit.....	72	68	71	71	65	31	20	13	15	13	46	44	44	46	41
Minneapolis <sup>5</sup> .....						31	12	16	23	21	23	8	9	14	13
New Orleans <sup>6</sup> .....	73	42	44	26	---	42	19	11	(*)	---	58	23	31	15	---
New York.....	87	90	92	93	91	70	70	64	71	72	76	81	80	84	83
Philadelphia.....	84	89	94	91	92	62	54	52	54	60	71	74	78	78	80
Pittsburgh.....	95	78	76	61	52	25	15	12	13	11	47	44	43	36	31
St. Louis.....	94	91	89	92	87	40	37	39	32	40	62	66	71	64	70
St. Paul <sup>7</sup> .....						40	24	23	31	34	30	17	14	19	22
Total <sup>8</sup> .....	84	80	81	79	77	54	49	44	48	48	65	65	64	65	65

<sup>1</sup> Auction data for 1934-37 obtained from auction company records; 1930 data for number of cars sold at auction and 1930 percentages shown in this table taken from tables 3 and 4, Park, J. W., American Fruit and Vegetable Auctions, U. S. Dept. Agr. Circ. 250. Carlot unloads from published records of Bureau of Agricultural Economics, U. S. Department of Agriculture. Arrivals by truck not included.

<sup>2</sup> Small fruit and berries included.

<sup>3</sup> 33 cars of salvage merchandise for 1934, 91 cars for 1935, 72 cars for 1936, and 61 cars for 1937 prorated to citrus and deciduous fruit, and to other commodity groups not shown in this table.

<sup>4</sup> Miscellaneous less-than-carlot consignments for 1934-37 not included.

<sup>5</sup> Auction sales at Minneapolis and St. Paul were reported as all deciduous.

<sup>6</sup> Figures for 1936 based on actual data and estimates. Auction discontinued December 1936.

<sup>7</sup> Carlots of citrus fruits sold at auction at Pittsburgh were slightly in excess of the reported unloads; 86 percent was used for 1930 as an arbitrary figure because some cars of citrus fruit were sold through private sales channels on this market.

<sup>8</sup> Citrus fruit was not sold at auction at Minneapolis and St. Paul. If citrus unloads at these markets are not included, the percentages of citrus unloads sold at auction are increased from 84, 80, 81, 79, and 77 to 86, 82, 83, 81, and 79.

<sup>9</sup> Less than 0.5 percent.



factors are of importance in determining whether a specific commodity may be sold through terminal auction channels.

In arriving at the percentages listed in table 3, the general procedure followed by the Department of Agriculture in determining 1930 ratios (6, table 4) was used for the 1934-37 figures. This step was taken in order that comparable figures could be obtained for all years. Percentages not included in the tabulation disclosed that the proportions of total carlot unloads of all commodities and commodity groups sold at auction, exclusive of bananas, were maintained at around 26 percent for the years 1930, 1934, and 1935. Commodity groups were as follows: Citrus and deciduous fruits, pineapples, melons, vegetables, and miscellaneous products—exclusive of bananas. Between 1930 and 1935 the percentage of these groups sold at auction increased slightly from 25.8 to 26.6 percent. In 1930 a total of 504,948 cars of the commodity classes included in determining these percentages was unloaded in the 13 auction markets. This total declined to 409,107 in 1934 and to 394,605 in 1935, a total drop of 21.9 percent, based on 1930 unloads. Similar figures for auction sales exclusive of bananas showed a drop of 19.3 percent

Citrus and deciduous fruits amounted over the 1934-37 period to about 92 percent of the total carlot sales at auction, exclusive of bananas. When examination was made of changes in the individual classifications, it was observed that the ratio of citrus sales at auction to carlot unloads showed a decline from 84 to 77 percent, while deciduous fruit dropped from 54 percent in 1930 to a low of 44 percent in 1935 and then increased to 48 percent in 1937. Declines in carlot unloads of apples and grapes, and particularly juice grapes, contributed significantly to the reduction in the percentage sold at auction

The percentages in table 3 definitely show that the combined proportions of total boat and rail unloads of citrus and deciduous fruit sold at auction have been maintained at 65 percent during the years 1930 and 1934-37, with the exception of 1935 when the percentage dropped slightly to 64.

### Relative Importance of Commodity Groups Sold at Auction

There has been some change in the relative importance of the several commodity classifications sold at auction, when comparisons are made for the years 1930 and 1934-37. Table 4 shows that citrus fruits increased relatively from 41.9 percent of the total auction sales in 1930 to 61.9 percent in 1937. Deciduous fruits decreased from 47.1 percent to 29.9 percent, when a similar comparison is made.

The percentage changes in table 4 show that between 1930 and 1937 citrus fruit became increasingly important in relation to total auction business. From the standpoint of the actual volume of citrus sold at auction, it can be shown that the differences in the total number of carloads between 1930 and 1937 can be accounted for almost completely by the short supply of citrus fruit in 1930. This conclusion is in accord with results set forth in table 3, where auction sales of citrus fruit expressed as percentages of citrus unloads in 11 markets were shown to be 84, 80, and 81 for the years 1930, 1934, and 1935, which is a fairly constant position.

Deciduous fruits, unlike citrus, have shown substantial decreases in rail and boat carlot unloads in auction markets between the years 1930 and 1937. The severe decline in the carlot volume of deciduous fruit rail and boat unloads in the auction markets was the principal reason for the substantial changes in the relative importances of the quantities of citrus and deciduous fruits sold at auction as shown in table 4.

TABLE 4.—PERCENTAGE DISTRIBUTION OF CARLOT AUCTION SALES BY COMMODITY GROUPS, 1930 AND 1934-37<sup>1</sup>

Commodity group	1930	1934	1935	1936	1937
Citrus fruits.....	41.9	58.8	63.3	62.7	61.9
Deciduous fruits.....	47.1	33.5	28.7	29.7	29.9
Melons, vegetables, and miscellaneous.....	8.2	6.1	6.3	5.2	5.2
Pineapples.....	2.8	1.6	1.7	2.4	3.0
Total.....	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Data cover all auction companies selling citrus fruit. Markets included as follows: Baltimore, Boston, Chicago, Cincinnati, Cleveland, Detroit, New Orleans, New York, Philadelphia, Pittsburgh, and St. Louis. Auction sales of bananas not included. New Orleans auction discontinued operation in December 1936.

Based on data in table 5, figure 5 presents a percentage composition of monthly auction sales during 1935 for seven auction companies located in Baltimore, Boston, Cincinnati, Cleveland, New York, Philadelphia, and Pittsburgh. The significance of California citrus fruit as a sustaining factor in auction volume is apparent, as well as the seasonal variability of other commodity groups.

The variation in the monthly total number of carloads of all commodities, exclusive of bananas, sold in important auction centers is set forth in figure 6, which is based on table 6.

TABLE 5.—DISTRIBUTION OF MONTHLY AUCTION SALES OF ALL COMMODITIES EXCEPT BANANAS FOR 7 AUCTION COMPANIES, 1935<sup>1</sup>

Commodity group	January	February	March	April	May	June	July	August	September	October	November	December	Total
	Number of carloads												
California citrus.....	1, 691	1, 697	1, 712	2, 216	2, 643	2, 787	3, 326	2, 974	2, 515	2, 442	1, 776	1, 415	27, 194
Other citrus <sup>2</sup> .....	2, 596	2, 127	2, 083	2, 243	1, 971	1, 238	362	56	217	648	1, 561	2, 399	17, 501
Apples.....	634	596	583	521	340	202	55	142	108	317	269	385	4, 152
Other deciduous <sup>3</sup> .....	371	186	249	255	278	651	1, 305	2, 386	2, 843	5, 100	2, 923	820	17, 367
Melons and vegetables.....	102	86	96	171	235	648	506	96	13	4	3	90	2, 050
Pineapples.....	30	41	124	200	367	281	75	25	31	11	10	19	1, 214
Miscellaneous <sup>4</sup> .....	2	-----	1	5	16	10	747	803	10	21	24	38	1, 677
<b>Total.....</b>	<b>5, 426</b>	<b>4, 733</b>	<b>4, 848</b>	<b>5, 611</b>	<b>5, 850</b>	<b>5, 817</b>	<b>6, 376</b>	<b>6, 482</b>	<b>5, 737</b>	<b>8, 543</b>	<b>6, 566</b>	<b>5, 166</b>	<b>71, 155</b>
	Percentage distribution												
California citrus.....	31. 2	35. 9	35. 3	39. 5	45. 2	47. 9	52. 1	45. 9	43. 8	28. 6	27. 0	27. 4	38. 2
Other citrus.....	47. 8	44. 9	43. 0	40. 0	33. 7	21. 3	5. 7	. 8	3. 8	7. 6	23. 8	46. 4	24. 6
Apples.....	11. 7	12. 6	12. 0	9. 3	5. 8	3. 5	. 9	2. 2	1. 9	3. 7	4. 1	7. 5	5. 8
Other deciduous.....	6. 8	3. 9	5. 1	4. 5	4. 7	11. 2	20. 5	36. 8	49. 6	59. 7	44. 5	15. 9	24. 4
Melons and vegetables.....	1. 9	1. 8	2. 0	3. 0	4. 0	11. 1	7. 9	1. 5	. 2	. 1	( <sup>5</sup> )	1. 7	2. 9
Pineapples.....	. 6	. 9	2. 6	3. 6	6. 3	4. 8	1. 2	. 4	. 5	. 1	. 2	. 4	1. 7
Miscellaneous.....	( <sup>5</sup> )	-----	( <sup>5</sup> )	. 1	. 3	. 2	11. 7	12. 4	. 2	. 2	. 4	. 7	2. 4
<b>Total.....</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>

<sup>1</sup> Auction companies included as follows: Baltimore, Boston (1 company only), Cincinnati, Cleveland, New York (1 company only), Philadelphia, and Pittsburgh.

<sup>2</sup> Includes 340 cars of Puerto Rican and Isle of Pine citrus.

<sup>3</sup> Includes 72 cars of Almeida grapes.

<sup>4</sup> Consists of 1 car of coconuts and 1,676 cars of commodities unclassified by auction markets.

<sup>5</sup> Less than 0.05 percent.

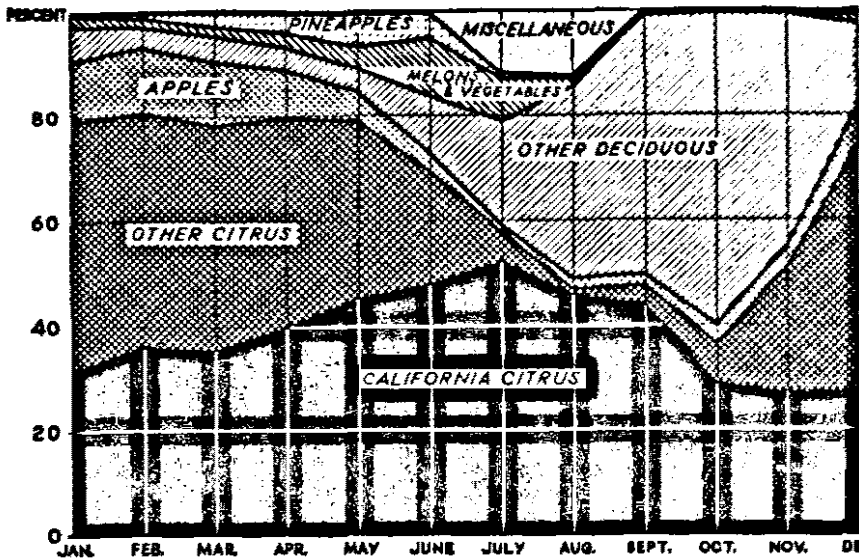


FIGURE 5.—PERCENTAGE DISTRIBUTION OF MONTHLY AUCTION SALES OF ALL COMMODITIES EXCEPT BANANAS FOR SEVEN AUCTION COMPANIES, 1935.

Citrus fruit comprised a substantial portion of the monthly auction business but its relative importance decreased materially during the July-November period when deciduous fruit was being marketed in quantity.

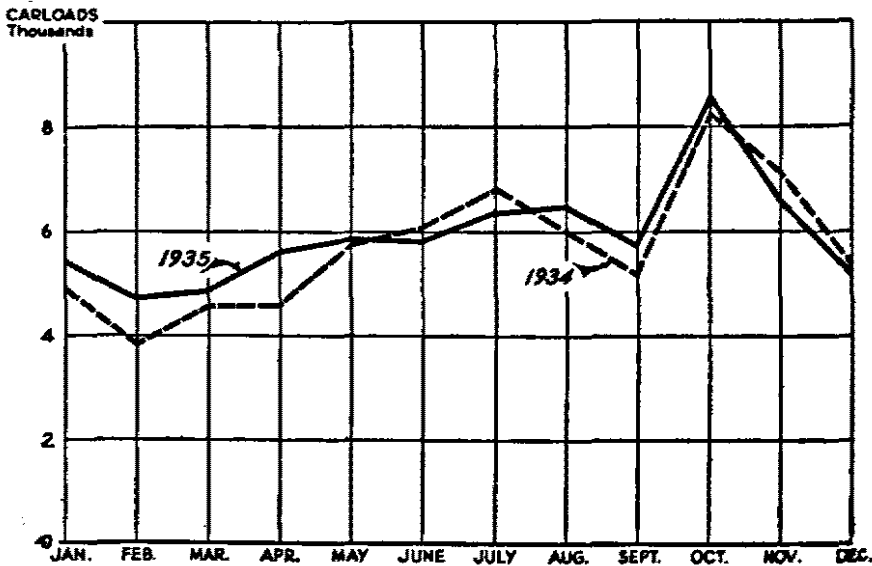


FIGURE 6.—TOTAL CARLOADS OF ALL COMMODITIES EXCEPT BANANAS SOLD MONTHLY BY SEVEN AUCTION COMPANIES, 1934 AND 1935.

Carlot sales at auction are smallest in February and largest in October.

TABLE 6.—TOTAL MONTHLY SALES OF ALL COMMODITIES EXCEPT BANANAS, FOR 7 AUCTION COMPANIES, 1934 AND 1935<sup>1</sup>

Month	1934		1935	
	Sales during month	Percentage of total for year	Sales during month	Percentage of total for year
	<i>Cars</i>	<i>Percent</i>	<i>Cars</i>	<i>Percent</i>
January.....	4,910	7.2	5,426	7.6
February.....	3,819	5.6	4,733	6.6
March.....	4,588	6.7	4,848	6.8
April.....	4,595	6.7	5,611	7.9
May.....	5,747	8.4	5,850	8.2
June.....	6,078	8.9	5,817	8.2
July.....	6,803	9.9	6,376	9.0
August.....	5,986	8.7	6,482	9.1
September.....	5,176	7.5	5,737	8.1
October.....	8,270	12.1	8,543	12.0
November.....	7,122	10.4	6,566	9.2
December.....	5,389	7.9	5,166	7.3
Total.....	68,483	100.0	71,155	100.0

<sup>1</sup> Auction companies included as follows: Baltimore, Boston (1 company), Cincinnati, Cleveland, New York (1 company), Philadelphia, and Pittsburgh.

### Commodities Sold at Auction for Cooperatives

The extent of the interest of cooperative associations in the auction method of sale is in a high degree measured by the use which they make of the auction in selling their members' products. It appears that at least 45 percent of the total number of carloads of all commodities, other than bananas, sold by auction companies in 13 markets in 1934 was for the account of cooperative organizations. Business done for cooperatives by the auction companies shows a wide range for the different markets, varying from 17.9 percent in St. Paul to 77.4 percent in Baltimore, as shown in table 7 and figure 7.

When the volume of auction sales for cooperative associations is examined from the standpoint of some of the individual commodities, substantial variations are found not only between markets, but also between commodities. Data presented in table 8 show that not less than 62 percent of all auction sales of citrus fruit was made for cooperative associations. On the New York auction market 56 percent of

TABLE 7.—TOTAL CARLOT SALES AND APPROXIMATE QUANTITIES SOLD FOR COOPERATIVE ASSOCIATIONS THROUGH AUCTIONS IN SPECIFIED MARKETS, 1934

Market	Total carloads sold at auction except bananas	Total carloads sold at auction including bananas <sup>1</sup>	Number of carloads sold for cooperatives <sup>2</sup>	Cooperative business as a percentage of total business exclusive of bananas	Cooperative business as a percentage of total business including bananas
	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>	<i>Percent</i>	<i>Percent</i>
Baltimore.....	2, 050	4, 226	1, 587	77. 4	37. 6
Boston.....	9, 534	9, 534	4, 736	49. 7	49. 7
Chicago.....	11, 348	11, 348	5, 762	50. 8	50. 8
Cincinnati.....	3, 333	3, 333	1, 557	46. 7	46. 7
Cleveland.....	3, 553	3, 553	2, 053	57. 8	57. 8
Detroit.....	3, 597	3, 597	2, 251	62. 6	62. 6
Minneapolis.....	267	267	55	20. 6	20. 6
New Orleans.....	1, 568	1, 568	454	29. 0	29. 0
New York.....	50, 453	62, 451	19, 069	37. 8	30. 5
Philadelphia.....	11, 388	13, 977	5, 498	48. 3	39. 3
Pittsburgh.....	3, 552	3, 552	1, 843	51. 9	51. 9
St. Louis.....	3, 634	3, 634	2, 110	58. 1	58. 1
St. Paul.....	357	357	64	17. 9	17. 9
Total.....	104, 634	121, 397	47, 039	45. 0	38. 7

<sup>1</sup> Banana sales of auction companies included in this survey were as follows: Baltimore 2,176 cars, New York (2 companies) 11,998 cars, and Philadelphia 2,369 cars, based on a loading of 475 bunches per car.

<sup>2</sup> Citrus and deciduous fruit (other than apples) figures based on actual sales for larger cooperative accounts at auctions for calendar year 1934. (See footnotes 1 and 2, table 8). Apple sales for cooperative account derived from an analysis of auction apple sales as explained in footnotes to table 9. Carloads shown as sold for cooperatives represent a minimum total based on the procedure outlined in this footnote. Complete tabulation of all sales for cooperative account would increase the proportion somewhat, but not materially.

the sales of this commodity was made for cooperatives, while Baltimore was highest with a percentage of 85.

About 22 percent of auction sales of Western boxed apples through eight auctions was sold for cooperative account during the 1934-35 marketing season. Samples for the period June 1934 to May 1935 were taken from the records of one auction company in each of the following markets: Boston, Chicago, Cincinnati, Cleveland, Detroit, and St. Louis, and from two companies in New York City. The periods in each of the markets were not always the same. Sales during several months distributed through the marketing season were taken in the larger markets and for the entire season in the smaller

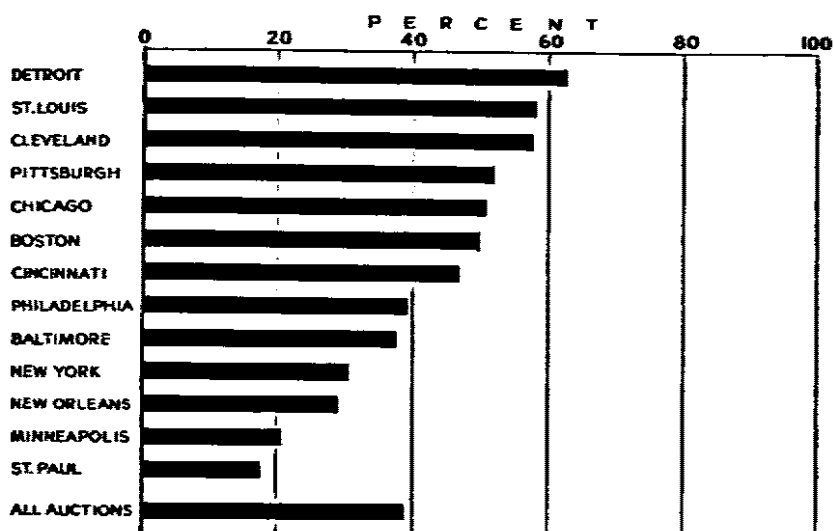


FIGURE 7.—SALES OF ALL COMMODITIES FOR COOPERATIVE ASSOCIATIONS IN PERCENTAGE OF TOTAL AUCTION BUSINESS, INCLUDING BANANAS, 1934.

Cooperative associations furnished substantial portions of the total carlot business of the auction companies. Percentages shown are minimums. If complete identification of sales for the account of cooperative associations had been possible, the percentages would probably be slightly, but not materially, larger in some instances.

markets, so that the estimates are based on a sufficiently broad basis to give a reasonably satisfactory result. The procedure involved taking from sales records brand and quantity data and then identifying the brands as to whether they were those of cooperative associations or private packers. Then, by various methods, including checking with receivers, it was determined whether sale was made for the account of packers and shippers or for intermediate purchasers.

This analysis, some of the results of which are presented in table 9, was based on a total of 2,688,459 boxes, or the equivalent of 3,556 carloads, which comprised around 50 percent of the total volume of apples handled by the eight auction companies during the 1934-35 marketing season. While the sample periods for which data were collected were not the same for all companies, as pointed out in the earlier discussion, the sampling methods followed and the volume of the sample are believed to be wholly adequate.

For the eight companies, it appears that 43.3 percent of their total Western boxed apple sales for 1934-35 consisted of products from cooperative associations. Of the remainder, 54.7 percent was packed by private operators. Slightly over one-half of the quantity packed

by cooperative associations and sold at auction, or 22.2 percent, was sold for the account of the cooperatives. This means that 20.2 percent, or almost one-half, of the cooperative brands sold at auction were sold for the account of speculative elements in the trade or other intermediate purchasers. The percentage of sales of private brands which could not be identified as to whether sold for packer or for other account was larger than in the case of cooperatively packed apples. The two percentages were 8.0 and 0.9.

Slightly over 50 percent of the auction sales of privately packed apples were made for the account of the packer. The ratio for cooperatively packed apples was practically the same. So far as the results of this analysis are indicative, it is probable that there were no essential differences between private and cooperative packers with regard to the relative quantities of their respective packs which

TABLE 8.—TOTAL CARLOADS OF CITRUS FRUIT SOLD AT AUCTION, APPROXIMATE NUMBER OF CARS SOLD FOR COOPERATIVE ASSOCIATIONS, AND CARLOT UNLOADS AT THE MARKET, 1934

Auction market	Total unloads of citrus fruit	Quantity sold at auction	Quantity sold at auction for cooperatives	Total auction sales in percentage of total citrus unloads	Cooperative sales in percentage of total unloads <sup>1</sup>	Cooperative sales in percentage of total auction sales
	<i>Cars</i>	<i>Cars</i>	<i>Cars</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Baltimore.....	2, 492	1, 447	1, 234	58. 1	49. 5	85. 3
Boston.....	7, 524	5, 808	3, 821	77. 2	50. 8	65. 8
Chicago.....	9, 558	6, 862	4, 931	71. 8	51. 6	71. 9
Cincinnati.....	2, 870	2, 228	1, 348	77. 6	47. 0	60. 5
Cleveland.....	3, 148	2, 685	1, 802	85. 3	57. 2	67. 1
Detroit.....	3, 939	2, 685	2, 018	68. 2	51. 2	75. 2
New Orleans.....	1, 399	583	403	41. 7	28. 8	69. 1
New York.....	28, 635	25, 869	14, 676	90. 3	51. 3	56. 7
Philadelphia.....	8, 875	7, 878	4, 599	88. 8	51. 8	58. 4
Pittsburgh.....	3, 581	2, 788	1, 622	77. 9	45. 3	58. 2
St. Louis.....	2, 909	2, 657	1, 878	91. 3	64. 6	70. 7
Total.....	74, 930	61, 490	38, 332	* 82. 1	51. 2	62. 3

<sup>1</sup> Shipments from the larger cooperative shipping organizations in Florida, California, and Arizona are included. Figures represent minimums and would be slightly, but not materially, increased if all cooperatives were included. Sales for Texas citrus cooperatives are not included in the cooperative volumes listed in this table. Auction sales of citrus fruit for Texas cooperatives were of very limited volume in 1934, but they have increased materially since that time.

\* The percentage of 82.1 is slightly higher than the 80 percent shown in table 3, because it is based on unloads in the 11 markets where citrus fruit was sold at auction instead of total citrus unloads in all of the 13 markets where auction sales were made in 1934.



were sold at auction for the account of operators other than the packers. This comparison is obscured because of the larger proportion of privately packed offerings for which the sellers could not be identified.

TABLE 9.—WESTERN BOXED APPLES SOLD AT AUCTION FOR COOPERATIVE ACCOUNT IN SPECIFIED MARKETS, 1934-35 <sup>1</sup>

Market	Total sold during sample period	Total sales for sample period <sup>2</sup>			
		(1) Packed by private operators	(2) Packed by cooperatives	(3) Sold for cooperative account	(4) Not sold for cooperative account
	<i>Boxes</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Boston <sup>3</sup> .....	119, 541	64. 2	35. 8	26. 0	9. 8
Chicago <sup>4</sup> .....	1, 038, 595	52. 2	45. 2	25. 8	18. 9
Cincinnati <sup>4</sup> .....	238, 203	52. 5	47. 1	20. 4	25. 4
Cleveland <sup>4</sup> .....	134, 232	63. 2	36. 8	3. 5	30. 4
Detroit <sup>4</sup> .....	114, 628	42. 0	57. 4	21. 0	25. 3
New York <sup>3</sup> .....	734, 893	59. 0	40. 2	21. 2	18. 9
St. Louis <sup>4</sup> .....	308, 367	52. 0	42. 2	21. 3	20. 8
Total.....	2, 688, 459	54. 7	43. 3	22. 2	20. 2

<sup>1</sup> Data for 1 auction company in Boston, Chicago, Cincinnati, Cleveland, Detroit, and St. Louis, and 2 companies in New York.

<sup>2</sup> All but 2 percent of the brands were identified as to whether cooperatively or privately packed. It was not possible in all instances, however, to determine whether sold for packer account. As a result, percentages in column (1) plus column (2) do not always total 100.0 percent. Similarly, column (3) plus column (4) may show less than the total percentage in column (2). Percentages for the entire distribution are as follows: For cooperative packs, sold for own account 22.2, for others 20.2, seller not known 0.6; private packs, sold for own account 29.6, for others 17.1, seller not known 8.0; packer or other necessary information lacking 2.0; total 100.0 percent.

<sup>3</sup> Data for months of November 1934 and February and May 1935 for 1 company in Boston and 1 company in New York. Other New York auction data for October, November, and December 1934.

<sup>4</sup> Data for period June 1, 1934-May 31, 1935.

# Trade and Area Coverage Through Terminal Auctions

## Trade Coverage

**O**NE OF the problems of interest to cooperative associations and others giving consideration to the use of terminal sales agencies is the extent to which trade coverage in the market is obtained by selling at auction. Another correlated problem has to do with auction sales made to out-of-town buyers or their representatives.

Reference has already been made to the percentage of carlot unloads (see table 3) of certain commodities and commodity groups sold at auction. This tabulation does not tell the story completely because it does not show individual commodities and their shipping-point origins. These limitations notwithstanding, it is evident from table 3 that substantial proportions of rail, express, and boat receipts of all citrus and deciduous fruits are sold through terminal auction companies. The tabulation shows that almost four-fifths of the citrus fruit unloads in auction markets are sold through terminal auctions. Deciduous fruits are sold at auction in varying degree, but taking the group of commodities as a whole for the 3 years 1930 and 1934-37, they have shown a range of from 54 percent in 1930 to 48 percent in 1937. Pineapples are sold in substantial proportions through the auctions, 69 percent of the carlot unloads in 1930, 51 percent in 1934, and 62 percent in 1935 having been sold through auctions. Vegetables, as a group, are sold only to a small extent through auctions.

## Area Coverage

Another point of interest regarding terminal auctions is information dealing with the area served by them. In figure 8 is presented a diagram of the locations of out-of-town customers of auctions in nine markets, together with an indication of the citrus distribution area for Chicago, as approximated by members of the trade at Chicago.

For the auction markets other than Chicago, the out-of-town locations shown are those of customers 25 or more miles distant from the auction, who were billed at the addresses by auction companies for commodities bought on the auction. Such purchases in some instances were made directly by the buyer, in others through a buying broker or other representative. No such out-of-town billings were recorded for Chicago. The 25-mile minimum is an arbitrary figure taken as a means of eliminating the nearby or suburban part of the business

transacted by auction companies. The distribution of these points according to different ranges of distance is shown in table 10.

TABLE 10.—NUMBER OF ADDRESSES OF OUT-OF-TOWN CUSTOMERS OF 11 AUCTION COMPANIES AT VARIOUS DISTANCES FROM INDIVIDUAL AUCTION MARKETS, 1934-35<sup>1</sup>

Auction market	Miles from auction market							Total addresses
	25-49	50-99	100-149	150-199	200-249	250-299	300 and over	
Baltimore.....	2	3	1	1	2			9
Boston (2 companies).....	12	12	5	3	1	1	4	38
Cincinnati.....	2	5	14	4	1	1	1	28
Cleveland.....	3	11	2	1				17
Detroit.....	1	7	3	1				12
New York (2 companies).....	5	10	8	11	5	3	7	49
Philadelphia.....	7	11	7					25
Pittsburgh.....	11	13	6	1	1			32
St. Louis.....		3	4	1				8
<b>Total.....</b>	<b>43</b>	<b>75</b>	<b>50</b>	<b>23</b>	<b>10</b>	<b>5</b>	<b>12</b>	<b>218</b>

<sup>1</sup> Addresses of out-of-town customers buying through buying brokers or other intermediaries not included except where billing for purchases was made direct by auction companies. Customers less than 25 miles distant from auction market not included. Tabulation is based on data for weeks of Sept. 10-15 and Dec. 10-15, 1934, and Mar. 11-16 and June 10-15, 1935, for all auctions with the exception of Boston, for which only the 2 weeks in 1936 are included.

While quantity considerations based on the information presented in table 10 and in figure 8 are incomplete for reasons already cited, the data are of interest because they indicate the areas to which physical movement of commodities directly purchased at auction moved directly to points outside of the market center. Redistribution of auction commodities to other markets through jobbers and other handlers was not included.<sup>5</sup>

The areas in which the auctions are of direct influence, through the physical movement into them of commodities purchased at auction, in all probability are about as defined in figure 8. Distribution areas shown in this figure for markets other than Chicago, as indicated by

<sup>5</sup> Those desiring to follow this point further will be interested in a detailed study of Philadelphia as a distributing market to secondary cities of Pennsylvania. Donaldson, R. B. PHILADELPHIA WHOLESALE FRUIT AND VEGETABLE MARKETS. Pennsylvania State College. Bull. 349. 56 pp. 1937. The Baltimore market has also been studied recently. See Burdette, R. F., and DeVault, S. H. THE BALTIMORE WHOLESALE FRUIT AND VEGETABLE MARKETS. University of Maryland. Bull. 409. 65 pp. 1937.

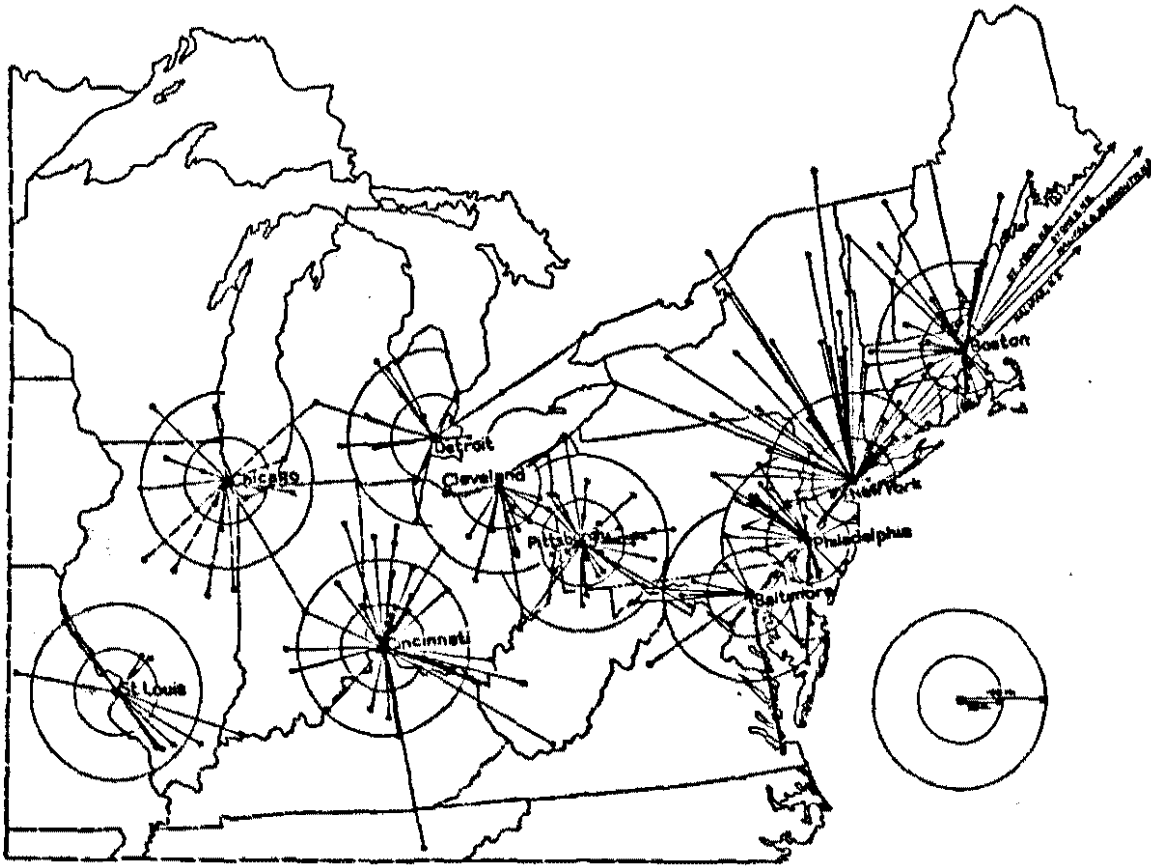


FIGURE 8.—LOCATION OF OUT-OF-TOWN CUSTOMERS OF TERMINAL AUCTIONS IN 9 MARKETS AND CITRUS DISTRIBUTION AREA FOR CHICAGO, 1934-35.

Customers of auction companies are distributed over wide areas. For Chicago the locations represent the approximate distribution territory for California citrus fruit purchased from Chicago handlers. Out-of-town buyers did not patronize the Chicago auction since they would have incurred increased delivery costs because of certain trucking rules and regulations prevailing in the Chicago metropolitan area.

auction billings, are for all commodities sold at auction. Distribution areas for California citrus fruit purchased through these same auctions, with minor exceptions, are essentially the same as the areas for all commodities. Dealers handling commodities sold at auction in these areas have available to them the alternatives of purchase at auction or in carlots.

Relative advantages and costs play important parts in the dealer's determining which method of procurement he will follow. Less-than-carlot purchases against carlot purchases, selected sizes against numerous sizes contained in the carload unit, carrying of larger stocks through purchasing in carlots, dividing carlot purchases with other buyers, relative costs including trucking from the auction market, shrinkage, time, and brokerage fees, all enter into the problem of determining which alternative the dealer is to follow. The conclusion seems evident that costs of the same commodities sold at auction and at private sale in the areas where physical movement from auction center to outside markets takes place, must be comparable from the standpoint of the buyer, otherwise, one or the other method of sale will show an increased use. In employing the word "cost," all cost factors including price are implied. Some of the more important of these factors have been stated in the opening sentences of this paragraph. The necessity of maintaining supplies of a commodity on a basis of proper adjustment to the requirements of both auction and private sales markets seems self-evident in the areas where actual movement of commodities takes place from auction to out-of-town customers.

The extent to which auction sales are made to out-of-town purchasers is indicated to some degree by the data in table 11, which shows auction sales of a number of commodities made to purchasers with business addresses 25 or more miles distant from the auction center. The data presented in this table and also in table 12 have definite limitations to which attention should be called. The figures for 9 auction markets, with the exception of Boston, are based on analysis of all transactions of 11 auction companies for 4 sample weeks, September 10-15 and December 10-15, 1934, and March 11-16 and June 10-15, 1935. The Boston data include the two weeks in 1935 only. As indicated in a footnote to the two tabulations, the percentages are to be regarded as minimum proportions, as any additional purchases for out-of-town customers made through buying brokers that are not shown specifically for them on auction company records, have not been included.

It is believed, however, that the figures in the two tables furnish a basis for determining the distribution areas directly served by the auction company or companies operating in the various auction markets. These percentages clearly indicate the importance of terminal

auctions to out-of-town buyers as direct sources of supply. Table 12 is interesting also from the standpoint of indicating the extent to which imported commodities are purchased at auction by out-of-town buyers.

TABLE 11.—AUCTION SALES OF SPECIFIED COMMODITIES MADE TO PURCHASERS WITH BUSINESS ADDRESSES 25 OR MORE MILES FROM THE AUCTION MARKET, 1934-35 <sup>1</sup>

Distance and commodity groups	Percentage of total value of all sales of indicated commodity group <sup>2</sup>							
	Balti- more	Boston	Cincin- nati	Cleve- land	Detroit	Phila- delphia	Pitta- burgh	St. Louis
<b>25-49 miles:</b>								
California oranges.....	9.8	11.7	8.9	12.3	0.6	5.6	6.0	.....
California lemons.....	23.0	9.5	.7	10.3	.4	4.3	4.8	.....
Florida oranges.....	4.8	8.7	1.0	9.6	1.1	5.3	1.4	.....
Florida grapefruit.....	3.3	7.4	.5	11.0	.6	4.5	2.9	.....
Northwest apples.....	1.1	6.2	1.1	12.0	.9	5.6	3.1	.....
Pears.....	10.0	9.6	.....	14.5	.....	6.1	3.7	.....
Emperor grapes.....	12.7	.....	.8	17.4	.4	6.8	6.6	.....
Other grapes.....	18.8	.....	.9	12.2	.2	7.8	5.6	.....
All commodities <sup>3</sup> .....	13.3	10.2	.8	11.7	.6	5.5	4.7	.....
<b>50-99 miles:</b>								
California oranges.....	2.2	6.1	11.8	6.3	6.1	3.1	7.9	3.3
California lemons.....	.2	5.2	14.2	7.2	9.8	2.4	7.6	4.1
Florida oranges.....	1.4	3.0	10.1	4.2	2.7	3.6	6.0	.6
Florida grapefruit.....	.9	3.7	15.5	8.9	3.2	2.2	6.8	1.5
Northwest apples.....	.....	5.2	13.3	6.0	6.6	1.8	6.3	1.6
Pears.....	.4	3.1	9.8	.....	.8	1.2	4.4	.....
Emperor grapes.....	1.5	.....	9.2	16.9	3.4	4.8	21.4	3.5
Other grapes.....	.5	.....	10.1	4.3	2.8	.9	7.8	.6
All commodities <sup>3</sup> .....	1.2	5.2	12.1	6.6	6.1	2.7	7.4	2.6
<b>100 miles and over:</b>								
California oranges.....	1.7	2.8	24.0	1.5	1.8	1.6	1.8	2.0
California lemons.....	1.8	8.0	17.1	2.6	3.0	2.2	3.1	1.0
Florida oranges.....	1.3	1.7	9.8	1.2	.3	1.0	.7	.8
Florida grapefruit.....	1.4	4.1	14.6	2.0	3.4	1.3	1.3	.3
Northwest apples.....	.7	.5	10.7	.5	.2	1.2	1.1	.3
Pears.....	.....	.....	12.6	1.3	.9	.3	.7	.....
Emperor grapes.....	2.3	.....	13.8	1.6	2.5	2.0	1.3	1.5
Other grapes.....	.4	.....	17.8	.....	.6	1.3	1.2	.5
All commodities <sup>3</sup> .....	1.3	3.0	17.2	1.6	1.9	1.5	1.6	1.3
<b>Total for all mileage groups:</b>								
California oranges.....	13.7	20.6	26.7	20.1	8.5	10.3	15.5	3.2
California lemons.....	23.0	22.7	20.9	20.1	12.2	8.9	15.5	5.1
Florida oranges.....	7.5	13.4	20.9	15.0	4.1	10.5	8.1	1.2
Florida grapefruit.....	5.6	15.2	20.6	21.9	12.2	8.3	10.8	1.3
Northwest apples.....	1.8	11.9	25.1	19.5	6.7	8.8	11.0	1.9
Pears.....	10.4	12.7	22.3	15.8	1.7	7.6	3.6	.....
Emperor grapes.....	16.5	.....	23.6	25.8	6.3	12.6	20.2	5.0
Other grapes.....	19.7	.....	26.3	17.5	3.6	10.5	14.6	1.1
All commodities <sup>3</sup> .....	15.3	18.5	20.1	19.9	3.6	9.7	12.7	3.9

See footnotes at end of table.

TABLE 11.—AUCTION SALES OF SPECIFIED COMMODITIES MADE TO PURCHASERS WITH BUSINESS ADDRESSES 25 OR MORE MILES FROM THE AUCTION MARKET, 1934-35—Continued

TOTAL VALUE OF ALL SALES

Distance and commodity groups	Percentage of total value of all sales of indicated commodity group							
	Balti- more	Boston	Cincin- nati	Cleve- land	Detroit	Phila- delphis	Pitts- burgh	St. Louis
California oranges.....	\$64,827	\$308,080	\$97,242	\$147,915	\$194,351	\$319,461	\$149,874	\$189,928
California lemons.....	40,687	82,269	35,230	35,085	80,806	78,842	38,734	34,037
Florida oranges.....	14,065	52,457	38,384	36,897	22,015	195,105	35,036	10,168
Florida grapefruit.....	9,203	45,295	28,474	26,811	21,695	79,418	20,425	6,662
Northwest apples.....	3,757	19,132	33,466	22,796	10,110	54,772	12,669	43,430
Pears.....	11,996	7,934	4,908	1,482	6,597	57,565	8,253	8,316
Emperor grapes.....	11,363	-----	8,437	7,979	10,564	27,405	4,803	12,738
Other grapes.....	14,267	-----	13,742	15,030	10,163	59,059	11,688	14,543
All commodities <sup>1</sup> .....	168,131	410,219	292,894	328,422	346,916	979,139	312,305	374,577

<sup>1</sup> Data for weeks of Sept. 10-15 and Dec. 10-15, 1934, and Mar. 11-15, and June 10-15, 1935, for all auctions with the exception of Boston, for which only the 2 weeks in 1935 are included. The percentages in this tabulation are based on auction company billings to customers. The percentages are to be regarded as minimum proportions, as any additional purchases for out-of-town customers made through buying brokers that are not shown specifically for them on auction company records have not been included.

<sup>2</sup> For example, total value of all auction sales of California oranges at Baltimore during 4-week period was \$64,827, of which 9.8 percent was sold to buyers in the 25-49 mile group.

<sup>3</sup> Item includes a limited volume of commodities not shown in this tabulation.

TABLE 12.—AUCTION SALES OF SPECIFIED COMMODITIES MADE TO PURCHASERS WITH BUSINESS ADDRESSES 25 OR MORE MILES FROM NEW YORK CITY, 1934-35 <sup>1</sup>

[Percentage of total value of all sales of indicated commodity group]

Commodity group	25-49 miles	50-99 miles	100-149 miles	150-199 miles	200-249 miles	250-299 miles	300-349 miles	350-399 miles	Over 400 miles	Total
Chestnuts.....	-----	15.4	1.2	8.7	9.8	1.0	-----	0.7	15.7	52.5
Chilean fruit.....	-----	-----	-----	39.7	-----	-----	-----	-----	-----	39.7
Havana pineapples.....	-----	10.6	1.9	7.4	3.6	2.9	9.8	-----	2.6	38.8
Puerto Rican pineapples.....	-----	13.0	1.5	3.8	2.9	.4	.7	-----	-----	22.3
Argentine fruit.....	-----	9.4	1.5	5.3	.3	.2	.4	-----	.4	17.5
Tomatoes.....	( <sup>2</sup> )	12.8	1.7	.2	.8	.5	.1	-----	-----	18.1
Other Puerto Rican fruit.....	0.1	6.7	1.1	1.4	1.0	.7	.3	.2	.2	11.7
Florida citrus.....	.8	1.8	.6	.4	.1	.1	.4	-----	.1	4.3
Grapes.....	-----	3.8	-----	-----	-----	-----	-----	-----	-----	3.8
California citrus.....	.3	2.0	.4	.4	( <sup>3</sup> )	.2	( <sup>3</sup> )	-----	-----	3.3
Western deciduous.....	.3	.9	.6	.4	.1	( <sup>3</sup> )	.1	( <sup>3</sup> )	-----	2.4
Bananas.....	.6	.6	-----	-----	( <sup>3</sup> )	( <sup>3</sup> )	-----	-----	-----	1.3
All commodities <sup>3</sup> .....	.4	2.4	.6	.5	.2	.1	.2	( <sup>3</sup> )	.1	4.5

<sup>1</sup> Data for weeks of Sept. 10-15 and Dec. 10-15, 1934, and Mar. 11-16 and June 10-15, 1935, for both New York auction companies are included. The percentages in this tabulation are based on auction company billings to customers. The percentages are to be regarded as minimum proportions, as any additional purchases for out-of-town customers made through buying brokers, not shown specifically on auction company records, have not been included.

<sup>2</sup> Less than 0.05 percent.

<sup>3</sup> This item includes a limited volume of commodities not shown in this tabulation. The values of all sales of the indicated commodities for the 4 weeks were as follows: Chestnuts, \$6,427; Chilean fruit, \$403; Havana pineapples, \$33,547; Puerto Rican pineapples, \$46,049; Argentine fruit, \$26,770; tomatoes, \$278,622; other Puerto Rican fruit, \$32,950; Florida citrus fruit, \$1,067,112; grapes, \$61,009; California citrus, \$1,164,984; western deciduous fruit, \$1,206,435; bananas, \$470,640; all commodities, \$4,529,381.

## Price Considerations

**O**NE OF the primary questions of importance to cooperative sales managements relates to the usefulness of the auction price of a commodity in a single auction market or in a group of such markets as an indicator of the general market price for the commodity, including not only sales at auction but also private-sales transactions in areas both near auction markets and at a distance from terminal auction centers. Auction prices are used by sales managements, acting for both cooperative and private sellers, as a basis for price quotations in private-sale transactions. These latter transactions may take place (1) directly in the markets where auctions are located, (2) in nearby markets to which it is possible to transfer any commodity purchased at auction, and (3) in markets so distant from auction centers that any such transfer is wholly out of the question.

Not all cooperative associations handling any of the commodities sold through terminal auctions are confronted by the problem of price quotations involving all three kinds of private-sale transactions outlined in the preceding paragraph. Some important marketing associations do not sell at private sale in markets where they make use of auctions. These associations follow a policy of using only one method of sale in a single market. Other associations making limited use of the auctions and selling at private sale in important auction markets and in nearby markets use certain agreed-upon auction average prices as a price basis. In such cases, the price is based on the auction average of like grades and sizes sold at auction on the date of arrival of the shipments consigned to private buyers. These auction averages may apply to a single market or to more than one auction, as agreed upon between seller and buyer. In such cases, although actual delivery to the buyer may take place at a point outside of the auction market, it is apparent that the auction price is of first importance to the seller even though the auction is not directly employed by him in making the sale.

It is clear that price quotations in private-sale markets adjacent or near to auction centers must follow closely the course taken by auction prices for the same variety, grade, size, and condition of the same commodity. This follows because auction prices are public and are widely disseminated through buying brokers, trade papers, and similar agencies. Members of the trade are thus informed promptly of the prevailing prices of auction commodities in which they are interested. Furthermore, buyers in auction markets and in the market areas adjacent to the auctions are fully acquainted with the alternative costs of obtaining their supplies through auction channels



and through private-sale purchasing. Consequently, prices at auction and at private sale where it is possible for a commodity to move to buyers either through the terminal auction markets or direct by private sale must of necessity exhibit a close agreement if use of both methods is to be continued.

Marketing associations also employ auction prices as a basis for private-sale quotations in markets sufficiently distant from auction centers that physical transfer of commodities purchased at auction is not practicable.

Upon examination of the possibilities of developing an analysis of the value or accuracy of auction prices as indicators of prices which should prevail in private-sale areas, it becomes immediately apparent that one is confronted by a situation which appears to be possible of approach by indirect methods only. The prices to be examined, both auction and private sale, are component parts of a complex price structure, the interrelationships of which are such that neither price can be isolated for purposes of analysis.

This holds true at all times, but it becomes a particularly troublesome difficulty when consideration is being given to short-time intervals of a month or less. The fact that auction prices are used as a basis of arriving at private-sale quotations illustrates clearly one phase of this interrelationship. The problem, however, is one of importance to cooperative sales managements and despite the apparent difficulties, a conclusion was reached to include some inquiry into this field as one of the objectives of this study.

The difficulties of the problem make it necessary to direct its study from more or less isolated angles and in a rather incomplete manner. It seemed desirable, therefore, to select some one commodity which was sold in quantity both at auction and at private sale and for which reasonably satisfactory data were available. It was also necessary to eliminate, insofar as practicable, the effect of shipments of the same commodity from competing areas. For example, a statistical analysis of short-time changes, i. e., monthly or weekly, in the price of California Navel oranges would be exceedingly difficult because of problems arising from the presence in the markets at the same time of large volumes of oranges from competing production areas. California Valencia oranges, on the contrary, meet orange and grapefruit competition in considerable volume only at the opening and closing of the marketing season. This commodity, however, meets competition from a variety of fruits, such as berries, melons, peaches, and others. California Valencia oranges were selected as the commodity for detailed study, although extensive search was made for data on oranges from Florida and for other California deciduous products in an effort to obtain material which could be used readily in making comparisons between prices realized at auction and at private sale.

It was thought that a discussion of the nature of auction price and its relation to private-sale price for a representative commodity as shown by a comparison of prices would be helpful. It should be recognized that any conclusions which may be drawn relate only to the commodity on which the discussion is based and only for the periods included in such an examination.

In approaching this problem, however, it did not seem adequate to rely solely upon a comparison of auction- and private-sale prices for the same commodity over intervals of a month or shorter periods. The fact that California Valencia orange price quotations at private sale were in large measure based on auction prices appeared to call for additional analysis. This requirement, in part at least, could be met by an inquiry into several considerations involving the extent to which auction price could be explained by statistical analysis.

The inquiry into the validity of using auction prices as indicators of price quotations in private-sale transactions was, therefore, directed along the following lines: (1) The extent to which the annual or seasonal price of California Valencia oranges can be explained by ascertainable and measurable factors, (2) consideration of factors influencing the auction price of the same commodity on a single auction market, (3) the relationship existing between concurrent price movements for specific commodities in the several auction markets, and (4) a comparison of concurrent prices of the same commodity in auction- and in private-sale markets.

### Factors Affecting the Annual Price of Oranges

Much analytical work has been done by other workers in the field of determining the factors which bring about changes in orange prices, including all oranges produced in the United States and oranges produced in specific areas. A study by the Agricultural Adjustment Administration of factors bringing about changes in the annual farm price of all oranges for the United States points out that "changes in the farm price of oranges from year to year may be accounted for, first, by commercial supplies offered to the market, and second, by changes in consumers' buying power. Commercial supplies, as measured by commercial production, plus receipts from Puerto Rico, less exports, are of major importance in explaining changes in prices received by growers. Change in consumer demand is of next importance" (1). This study covering the period beginning with the 1921-22 season and ending with the 1932-33 season, shows that for this period changes in the farm prices of all oranges were accounted for statistically by definitely measurable factors.

A second study which has more direct bearing upon the price for California Valencia oranges is reported in a publication of the Uni-

versity of California (12). While this study dealt with prices of California summer oranges, it should be understood that the summer production of California oranges consists dominantly of the Valencia variety. Unlike the previous study of United States annual orange prices in which two factors were sufficient for the purpose of the analysis, the study of prices of California summer oranges was based on five statistical factors. In the report of this study, it is stated that "Variations in the seasonal average f. o. b. prices of California summer oranges are caused by numerous factors. Not all of these factors, however, can be measured with the data now available. In this analysis the following were measured: (1) California shipments, (2) trend of demand, (3) buying power of consumers, (4) competing fruit production, and (5) average sizes of Valencia oranges. While most of the variations in the seasonal average f. o. b. prices of California summer oranges from 1922 to 1934 can be accounted for by the factors measured, others have also had some influence. During the 3 years 1931-33, lack of confidence on the part of the trade in the stability of orange prices was a factor of some importance" (12). In this study, the index of competing fruit production included data for fresh apples, apricots, peaches, pears, plums, and cantaloups, and United States shipments of grapefruit, shipments of oranges other than from California, and imports of bananas during the 6 months May to October, inclusive.

These two studies indicate that for the periods covered by each, prices of United States oranges and of California summer oranges were responsive to measurable factors. The fact that in the first of the two studies, two factors were adequate for the purpose of the analysis and in the second study five factors were used, should not be at all confusing, as the reason appears to be quite plain. California summer oranges constitute only a portion of the total United States marketings of all oranges. The analyses, therefore, apply to different commodities, as well as to different time periods. The difference in the number of factors and in the factors themselves is not of material significance. The important point is that the prices of all United States oranges and of a portion of the total were shown to be influenced by factors which can be statistically measured. While the relative importances of price-determining factors vary as conditions change, even to the extent of bringing about the necessity of adding new factors and discarding others, the results of these two studies and others indicate that annual prices of California summer oranges for other time periods should be explainable in terms of some similar group of statistically measurable factors. As California summer oranges consist to a very large extent of the Valencia variety, this conclusion is in all probability applicable to this one variety also. There is little reason to believe otherwise.

Because the annual price is a combination of auction- and private-sale prices, this discussion of annual price is related to the problem of the use of auction prices as indicators of price in private-sale transactions. If the composite price is capable of economic analysis on an annual basis, a foundation is formed for attempting a consideration of the elements making up the annual price. These elements consist of short-time price movements for auction and private-sale transactions.

### Factors Affecting Monthly Prices of Oranges

On the basis of unpublished analyses made during the course of this study by the Division of Finance and Research and the Cooperative Division of the Farm Credit Administration, significant deductions may be drawn regarding factors which influence variations in the monthly auction prices of California Valencia oranges at New York and Chicago. Statistical analyses of factors affecting monthly prices, particularly in a single market, become highly involved and the details of the analyses are, therefore, not presented here.

It is sufficient for the purposes of this study to state that variations in the monthly prices of California Valencia oranges sold at auction in New York apparently can be explained by factors derived from (1) the quantities of this one variety sold at auction at New York, (2) all other orange United States shipments, (3) an index of income of industrial workers, and (4) supplies at New York of certain competing fruits. Through this combination of factors it was possible to explain about 88 percent of the variation occurring in monthly auction prices of California Valencia oranges at New York over an 8-year period (1927-34). For the same period a similar analysis for Chicago yielded a percentage of about 89. The more important factors were those representative of California Valencia orange supplies at the New York auction, the remainder of the United States orange supply, and the income of industrial workers.

It would have been desirable to make comparable statistical studies for the same commodity in private-sale markets, but adequate data as to quantities sold and prices obtained were not available. Even in the auction markets certain essential data, such as those relating to the quantities sold and the corresponding prices obtained at private sale, were not available over the 8-year period.

The study of monthly auction prices of this commodity with the volume of exploratory work which was included in the study showed that in the cases of these two auction markets there was adequate reason to believe that variations in auction prices were explainable by statistically measurable factors. More complete statistical results are dependent upon the development of better and more detailed data regarding demand and supply conditions in the individual auction markets.\*

For the present study, it is sufficient to know that there is adequate reason to believe that auction prices in a relatively high degree reflect changes in demand and supply conditions in accord with measurable factors instead of being influenced in a substantial degree by forces which cannot be determined.

From a theoretical standpoint, it appears that prices in a single market should be determined largely by (1) the quantity sold on the market, (2) the remainder of the supply available outside the market, but capable of diversion in any quantity to the specific market, (3) some measure of purchasing power in the specific market, such as income of industrial workers, (4) supply of competing fruits available in the specific market, and (5) other factors of similar nature, some of which have not been stated adequately as yet in statistical terms. The results of our studies are in conformity with the foregoing, as factors representative of the first four named groups produced about 88 percent of the variations in monthly prices of California Valencia oranges.

On the basis of the discussion of annual and monthly prices, there is ample reason to believe that monthly auction prices of California Valencia oranges at New York reflect conditions as they exist on this market. The next steps in the study were to determine (1) how closely the New York auction-market price and prices in other auction markets move together, and (2) in a limited way, the extent to which auction- and private-sale prices move together.

Prior to a discussion of these points, there are some statements regarding fluctuations in auction price which should be made in the light of conclusions arising from the study of factors influencing monthly auction prices. It appears to be an evident conclusion that the more adequately supplies of California Valencia oranges sold at auction on the New York market can be controlled, the more effective will be any attempts to confine within reasonable limits fluctuations in auction price of the commodity insofar as this one factor is an influence in bringing about variations in price. The desirability of avoiding violent fluctuations in price is to be found in the widespread use of auction prices as an indicator of price in private-sale transactions. Other ill effects arising from wide fluctuations in price are not pertinent to the present discussion.

Control of the supply of a commodity is, of course, difficult when that supply is in the hands of many shippers. In the case of California Valencia oranges, a substantial portion of the supply offered at auction is in the hands of a single cooperative marketing organization, the California Fruit Growers Exchange, so that the degree of control exercised over auction offerings is greater than cases in which the offerings come from a large number of shippers. Through this one organization, it is possible to effect a higher degree of control of auction

offerings not only on the New York market, but on all other markets, than would be possible if the supplies were divided among many shippers, each controlling only a relatively small portion of the total.

In the field of Tokay grapes, studies of weekly prices in the principal auction markets for the 1929, 1930, and 1931 seasons showed that prices were influenced by the volume of shipments of Tokay grapes and the prevailing prices of other California table grapes (8). In this study, data are presented which show "how an analysis of the factors affecting prices in each market area may be used in planning the distribution of a given volume among the principal market areas to obtain the highest total returns" (8).

The problem of adjusting supply among the several auction markets so as to maximize sales returns is one of importance to growers and their associations as well as other shippers. Unfortunately, there are very few studies of sufficient detail and exactness to be used as bases for accurate intermarket distribution based on variations in demand among the different markets. The situation has been stated as follows: "The difficulty clearly is not with the principles (of controlled distribution among independent markets) we have discussed. It is with the data and facts available concerning demand conditions in the various markets" (10).

### Concurrent Price Movements in the Auction Markets

This part of the study involved the determination of the extent to which monthly prices of California lemons, Navel and Valencia oranges at each auction moved in agreement with the corresponding average monthly prices in all auction markets. Since auction prices are used by shippers and buyers as indicators of price, it was advisable to examine the price relationship existing among the several markets. This relationship was studied in two ways: (1) The monthly weighted average price for each fruit at each auction was compared with the average weighted monthly price in all auction markets, and (2) the amount of price change from month to month, rather than actual prices, was used as a basis of comparison.

In making these comparisons, the results have been expressed on the basis of a scale of values ranging between +1.00 and -1.00. On this scale +1.00 represents a condition of perfect and direct agreement in the relationship between the items of the two series of prices under comparison. If high prices of one series are paired with high values in the other, the value which is known as a correlation coefficient is positive and tends toward +1.00, which represents a condition of perfect and direct relationship. On the other hand, if high values in one series are associated with low values in the other series, the correlation is negative in sign and tends toward a value of -1.00,

which represents a perfect and inverse relationship. A coefficient of 0, therefore, represents no correlation between the two series.

In table 13 are presented six series of correlation coefficients of the type described in the previous paragraph. They indicate the high degree with which the actual monthly prices of California Valencia and Navel orange and lemon prices in the several auction markets move in agreement with the average monthly prices for each of these fruits in all auction markets. In the same table, coefficients for net changes in auction price from month to month for each fruit are also shown.

It is apparent from table 13 that, with limited exceptions, monthly prices and monthly price changes of California Valencia and Navel oranges and lemons in each of the auction markets showed a close

TABLE 13.—COMPARISON OF MONTHLY AUCTION PRICES AND PRICE CHANGES FOR CALIFORNIA VALENCIA AND NAVEL ORANGES AND LEMONS, WITH AVERAGES FOR ALL AUCTION MARKETS, 1927-35<sup>1</sup>

Auction market	Correlation coefficients <sup>2</sup>					
	California Valencia oranges		California Navel oranges		California lemons	
	Monthly prices	Monthly price changes	Monthly prices	Monthly price changes	Monthly prices	Monthly price changes
Baltimore.....	0. 983	0. 767	0. 984	0. 895	0. 900	0. 801
Boston.....	. 998	. 976	. 993	. 919	. 948	. 850
Chicago.....	. 996	. 935	. 988	. 898	. 977	. 910
Cincinnati.....	. 991	. 921	. 961	. 752	. 930	. 881
Cleveland.....	. 987	. 908	. 999	. 983	. 985	. 945
Detroit.....	. 995	. 958	. 994	. 962	. 979	. 925
New Orleans.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	. 898	. 779
New York.....	. 998	. 981	. 997	. 976	. 991	. 980
Philadelphia.....	. 997	. 962	. 994	. 946	. 971	. 927
Pittsburgh.....	. 994	. 945	. 996	. 963	. 968	. 927
St. Louis.....	. 990	. 888	. 990	. 947	. 937	. 867

<sup>1</sup> Data from California Fruit Growers Exchange and Bureau of Agricultural Economics.

California Valencia orange prices for 1928-35, May-November period for all seasons with the following exceptions for Baltimore: 1930, May-October and 1933, June-November.

California Navel-orange prices for December-May period of each season beginning with December 1927, and ending with May 1935.

California lemon prices for period November 1927-October 1935.

<sup>2</sup> Each coefficient in the "Monthly prices" columns indicates the degree of correlation existing between monthly prices in each auction market and the average monthly price for all auction markets. Coefficients in the "Monthly price changes" columns are similar except that they are based on net changes in price from month to month instead of on actual prices. The meaning of these coefficients is outlined on p. 33.

<sup>3</sup> Data not complete for period.

association with similar figures for the same commodity in all auction markets. In the few instances in which the values in table 13 are low, the explanation, in part at least, is to be found in several causes. Substantial variations in the quality and condition of the commodities sold in the markets may be one cause. Another is the difficulty in adjusting the volume of offerings in the cases of smaller markets so as to avoid extreme fluctuations in price. Other causes, no doubt, contributed to the situation, but these were not developed in this study.

In examining these coefficients, it should be borne in mind that they do not necessarily imply that prices in all auction markets are identical. The facts are quite the contrary. The coefficients are expressions of the degree or extent to which monthly prices in individual markets are on the average associated with monthly average prices in all auction markets, but the two price series under comparison may be of the same value or on different levels. These different price levels are brought about by such factors as essential differences in the offerings at individual auction markets based on variations in relative quantities, quality, and size of fruit, competitive fruit situation, and buying capacity of the average consumer in the different auction markets.

The figures presented in table 13 are on a monthly basis. From day to day, or week to week, there may be rather important differences attributable to variations in demand, supply-offerings, quality, and other factors. For Tokay grapes, it has been pointed out that "the major fluctuations in Tokay grape prices in the principal auction markets occur almost simultaneously. During a given week, however, prices in the several markets often varied considerably" (8). These short-time price variations must be carefully evaluated by sales management when consideration is being given to a change in price quotations based on observed changes in auction prices.

### Comparison of Prices in Auction and Nonauction Markets

In the previous discussion, attention has been directed to the fact that the seasonal price of California summer oranges, which are primarily of the Valencia variety, has been explained to a satisfactory degree by economic analysis. Similarly, the monthly auction prices of this variety can be reasonably well explained by selected economic factors. It has also been indicated that in each auction market monthly auction prices and net price changes from month to month of California Valencia oranges as well as Navel oranges and California lemons showed close relationships when compared with their respective average monthly auction prices and monthly price changes in all auction markets. To complete the final link in this analysis, it is



necessary to obtain some indication of the extent to which auction- and private-sale prices of Valencia oranges move together.

It would have been highly desirable to broaden the analysis to include other commodities and a longer period than one selling season, but lack of data and the magnitude of the job of developing adequate price series for auction and nonauction markets on a price-delivered basis prevented the taking of these additional steps. The most acceptable data appeared to be those relating to California Valencia oranges. Extensive search in other commodity fields and in another citrus area failed to bring to light other data satisfactory for the purpose.

In developing price series for comparison of prices in auction- and private-sale markets, extensive clerical and statistical work, which could be done most advantageously at Washington, was required. At the time the study was undertaken the latest records of the California Fruit Growers Exchange which could be released for use in Washington were the 1932 records of auction and private sales. This situation resulted from the necessity of keeping records for the later years at Los Angeles for use by officials and employees of the organization. Accordingly, the exploratory work in this field was limited to the information disclosed by the 1932 data.

In attempting to make comparison of prices obtained for a commodity sold in both auction and nonauction markets, several important considerations must be recognized in order that the limitations of the comparison may be fully understood: (1) Despite all efforts to reduce the difficulty to a minimum, when records of completed or past sales are used, possible variations in the quality or condition of the commodities sold at auction and at private sale will introduce differences definitely influencing prices realized to an unknown extent. For example, there is the difficulty of making an exact comparison of sales results obtained at auction with those from private sale, because the auction average may be adversely affected at times by an indeterminate portion of diverted cars and cars of off-condition fruit. These cars, when offered in private-sale markets, would be sold at a discount under prevailing prices for fruit in prime condition. In examining sales records some time after sale has taken place, there appears to be no practicable means of making due allowance for differences in auction- and private-sale prices arising from any variations in condition of the fruit sold through the two methods. If information regarding grade, condition, and related factors is obtained on a basis which can be directly related to sale prices, which means simultaneous collection of such data in auction- and private-sale markets, then an exact comparison of auction- and private-sale prices might be made. Such a procedure was not within the scope of the present study; (2)

the use of auction prices as bases for price quotations in nearby private-sale territory introduces an intermingled relationship that cannot be unscrambled. Auction prices and private-sale quotations in nearby markets must be kept in close agreement, with auction sales indicating the price level, if private sales are to be made in these nearby markets where it is possible for buyers to purchase fruit at auction; (3) the use of auction prices as a basis for price quotations in private-sale areas where products cannot be moved from auction markets introduces a tie-in with the auction market price which prevents an altogether independent price comparison; and (4) a final difficulty is to be found in possible changes in auction price levels brought about by variation in the proportion of the total quantity offered at auction, which distorts or alters the usual relationship existing between prices at auction- and in private-sale markets.

The analysis covered all delivered-price sales of California Valencia oranges made by the California Fruit Growers Exchange during the period from April 18 to November 26, 1932. For comparison, the price series were limited to local association brands packed under the Sunkist trade-mark of the California Fruit Growers Exchange. Analysis was made on the basis of size. Two series were developed (1) auction, and (2) private sale. Inspection revealed that differences in private sale delivered prices of California Valencia oranges in areas near auction markets and at a distance were not of sufficient importance to justify two private-sale price series. All private-sale data were therefore combined.<sup>6</sup>

It is possible that the economic situation prevailing during the summer of 1932 may have introduced some peculiarities in marketing relationships that would not be present in series taken for other periods. This places a somewhat indefinite restriction upon the conclusions which may be derived from the comparison. The sample, however, is adequate when viewed from the standpoints of grade, size, and method of sale, if the limitations resulting from possible variations in condition as discussed previously are kept in mind. Distribution of the sample according to size and type of sale is shown in table 14.

Quantitatively, the auction sale sample approximated a total of 10,002 cars and the private sales amounted to 4,177 cars, based on a loading of 462 boxes to each car. It was not possible to correct for any price differentials which normally existed in certain markets among brands of individual local associations which also met the

<sup>6</sup> Of 315 comparisons of weekly prices in private-sale markets located near auction markets and at a distance, 69.2 percent showed no difference in price. In an additional 5.1 percent of the comparisons, prices in private-sale markets outside of auction territory were 5 cents above or below prices in private-sale markets located in auction territory. Percentage for 10-cent variation in price was 3.6; for 15-cent, 9.8 percent; and for remaining amounts, 7.3 percent. In the size groups 170-280, which comprised about 36 percent of the sample (see table 14), about 80 percent of the prices were the same.

TABLE 14.—CALIFORNIA VALENCIA ORANGES, SUNKIST TRADE-MARK, SIZES 100-392, INCLUDED IN COMPARISON OF AUCTION- AND PRIVATE-SALE PRICES FOR THE PERIOD APRIL 18-NOVEMBER 26, 1932<sup>1</sup>

Size	Auction sales		Private sales		Private sales as a percentage of auction sales
	Boxes sold	Percentage of total auction sales	Boxes sold	Percentage of all private sales	
100-----	10, 172	0. 2	2, 957	0. 1	29. 1
126-----	74, 027	1. 6	21, 059	1. 1	28. 4
150-----	266, 594	5. 8	79, 082	4. 1	29. 7
176-----	543, 276	11. 8	183, 823	9. 5	33. 8
200-----	759, 103	16. 4	264, 108	13. 7	34. 8
216-----	1, 117, 286	24. 2	476, 966	24. 7	42. 7
252-----	847, 368	18. 3	379, 836	19. 7	44. 8
288-----	693, 745	15. 0	348, 992	18. 1	50. 3
344-----	292, 415	6. 3	167, 248	8. 7	57. 2
392 <sup>2</sup> -----	17, 041	. 4	5, 505	. 3	32. 3
Total-----	4, 821, 027	100. 0	1, 929, 576	100. 0	41. 8

<sup>1</sup> Data were compiled from California Fruit Growers Exchange records and include approximately 98 percent of all Sunkist sales at auction, and 69 percent of all Sunkist transactions in private-sale markets where pricing was on a price-arrival or delivered basis. Sales omitted consisted primarily of those in which individual prices for each size were not available. Limited sales of sizes larger than 100 and smaller than 392 and a relatively small volume in the opening and closing weeks of the season have also been omitted. The sample, covering the period April 18-November 26, consists of slightly less than 87 percent of total Sunkist Valencia transactions for the season, exclusive of exports and f. o. b. sales.

<sup>2</sup> Data for size 392 cover the period April 25 to November 26, 1932.

necessary requirements for packing their fruit under the Sunkist trade-mark of the exchange. Any such differentials as may exist between markets because of brand preference, merchandising policies of the organization with regard to quantities offered in the various markets, and related factors, have of necessity been regarded as constant. As previously indicated, it was not possible to obtain an exact comparison of prices, based on the same grade, size, and condition of fruit sold at auction and at private sale.

Prices for each size and market were arranged in order of value and the middle price (or median) in each series was selected as the representative price, all prices being stated in terms of the nearest 5-cent interval.

A distribution of the percentage differences between auction and private-sale prices expressed as percentages of auction price is presented in table 15. Three hundred nineteen weekly price comparisons are summarized in this tabulation. Price differences in 75

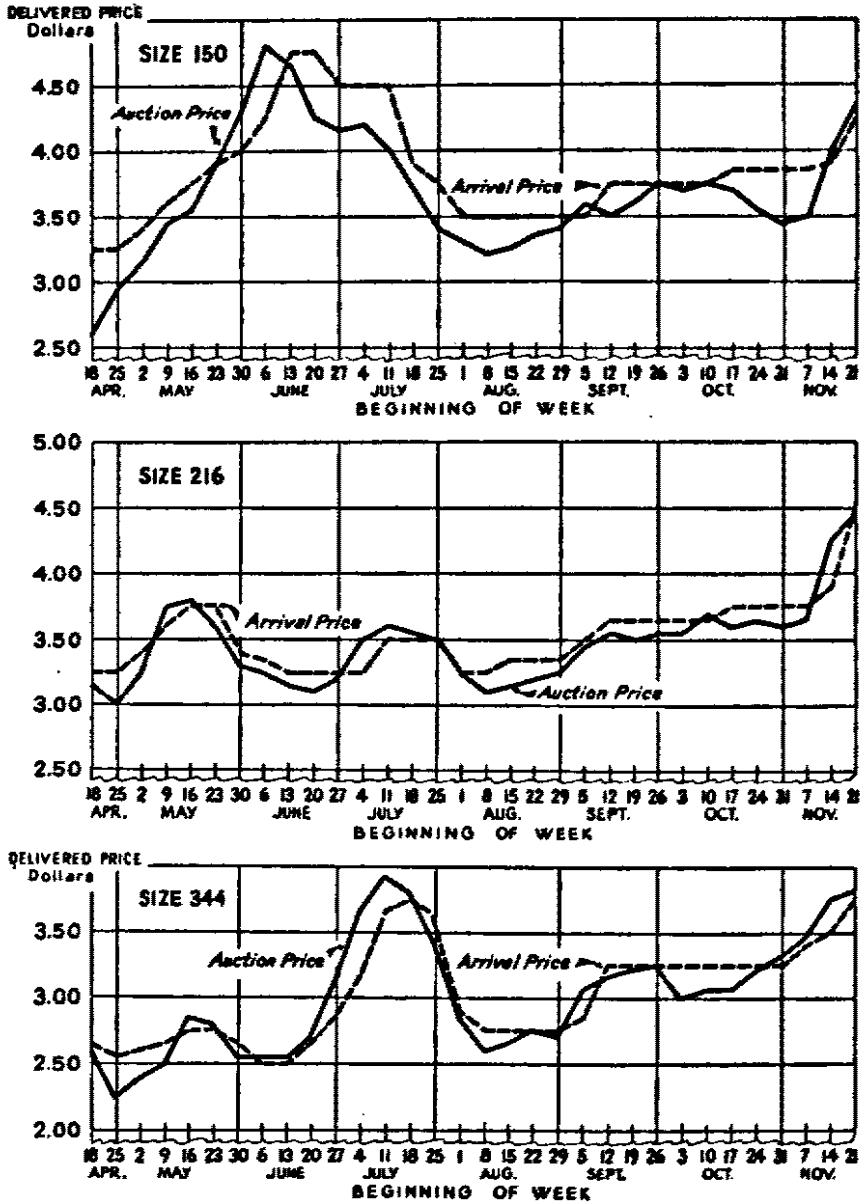


FIGURE 9.—WEEKLY AUCTION AND ARRIVAL PRICES FOR CALIFORNIA VALENCIA ORANGES PACKED UNDER THE SUNKIST TRADE-MARK, SEASON 1932.

Movements of weekly prices in auction markets and in private-sale markets, indicated by the arrival price line, were similar, although changes in arrival price at times tended to lag behind important changes in auction price. An exact comparison of auction- and private-sale prices is difficult because of the effect of off-condition lots of the commodity upon the auction average.

percent of the 319 comparisons were 5 percent or less, when expressed as percentages of weekly auction prices. Graphic comparisons of auction- and private-sale prices for three sizes of oranges are shown in figure 9, private-sale prices being designated as arrival prices in this figure.

TABLE 15.—DISTRIBUTION OF DIFFERENCES BETWEEN WEEKLY AUCTION PRICES AND PRIVATE SALE DELIVERED PRICES FOR CALIFORNIA VALENCIA ORANGES, SUNKIST TRADE-MARK, 1932 SEASON <sup>1</sup>

Difference in weekly prices expressed as percentages of auction price	Number of differences in oranges of size—										Percentage distribution of total <sup>2</sup>	
	100	126	150	176	200	216	252	288	344	392		Total
+15.1 and over.....	1									1	2	0.02
+10.1 to +15.0.....	2	1	1					1	1		6	.95
+5.1 to +10.0.....	5	2	1	1		2	2	3	4	3	23	5.80
+1 to +5.0.....	3	6	3	7	9	5	9	1	9	7	59	19.17
0.....	3	5	3	5	5	2	6	4	2	2	37	12.38
-.1 to -5.0.....	7	9	8	9	14	21	12	14	8	5	107	43.59
-5.1 to -10.0.....	1	3	10	6	4	2	2	8	7	8	51	14.10
-10.1 to -15.0.....	4	1	5	3			1	1	1	3	19	3.22
-15.1 and over.....	6	5	1	1						2	15	.77
Total number of weekly comparisons.....	32	32	32	32	32	32	32	32	32	31	319	100.00

<sup>1</sup> Data compiled from records of California Fruit Growers Exchange (see table 14). A plus sign (+) means that the auction price was larger than the price at private sale. A minus sign (-) indicates that price at auction was less than at private sale.

<sup>2</sup> The relative importances of the quantities of the different sizes of oranges in relation to total volume of all sizes (100-392) were used in determining the percentage distribution shown in this column. The weightings used were as follows: 100, 0.2 percent; 126, 1.4; 150, 5.0; 176, 10.7; 200, 15.2; 216, 24.5; 252, 19.0; 288, 16.4; 344, 7.2; 392, 0.4.

Another comparison of auction- and private-sale prices of limited scope was made for Northwestern apples. The data were restricted to the Winesap variety, Extra Fancy grade and sizes 96-163. Further restrictions limited the auction-price series to one company in New York where figures were obtained from the daily price-realized catalogs. The private-sale data were limited to sales made in auction territory.

Data cover the period January 2-April 22, 1935. It was not possible to develop a daily price series which would be continuous throughout the sales season. For the period, an average price of \$1.60 (delivered basis) was obtained for private-sale transactions and \$1.55

at auction when weighted according to quantities sold at the various prices during the period. When prices were averaged on a basis which did not give effect to quantities, private sales were found to be \$1.57 and auction \$1.55, both on a delivered-price basis. In view of the fact that it was necessary to add an estimate of freight and other transportation charges to f. o. b. prices in order to place f. o. b. sales on a delivered basis for comparison with auction prices, the differences are not significant.

When the daily series were examined, however, some material differences were observed which were not evident when averages for the entire period were the only prices to which attention was given. From January 2 until February 25, private-sale prices were, for the most part, less than auction prices. Following February 25, the reverse situation prevailed until the close of the period. No outstanding reason for these differences was apparent. A number of different factors in all probability were contributing causes. Among them may be mentioned variations in quality, brands, and quantities offered for sale in individual areas and changes in the local competitive situations with regard to apples brought out of storage or brought in from other producing areas. These factors no doubt tended in varying degrees to bring about differentials between prices at auction and at private sale.

Table 16 is based on the daily delivered price in private-sale markets of Northwestern Winesap apples, Extra Fancy grade, sizes 96-163, expressed as a percentage of the corresponding auction price. The range of percentages shows clearly that for the period covered by the data, successful use of New York auction prices as indicators of private-sale prices depended upon an adequate evaluation of such factors as those outlined in the preceding paragraph. The auction prices were not in themselves conclusive indicators of prices in private-sale areas. Efforts to obtain more satisfactory results by comparing each auction price with the private-sale price at various intervals of several days later in order to allow for a possible lag between auction- and private-sale prices did not indicate that such a lagged relationship existed.

Efforts were made to obtain data covering auction and nonauction sales of Florida citrus fruit, which would be useful for this phase of the study. Such data as were obtainable were reduced to an f. o. b. Florida basis, were for monthly periods, and were not on an individual size basis for private sale transactions. A factor of unknown weight enters into the use of f. o. b. citrus price data from the area because of differences in rail, water, and motor truck transportation charges, all of which enter into the net return figures, thus voiding the possibility of price comparison unless prices are built up directly from account sales. A similar effort in the field of Emperor grape prices was unproductive of a sufficient number of comparable auction and private-

sale prices to permit the determination of results of any material value.

TABLE 16.—DISTRIBUTION OF DAILY DELIVERED PRICES PER BOX OF NORTHWESTERN EXTRA FANCY WINESAP APPLES, SIZES 96-163, SOLD AT PRIVATE SALE IN AUCTION TERRITORY, EXPRESSED AS PERCENTAGES OF CORRESPONDING DAILY AUCTION PRICES, JANUARY 2-APRIL 22, 1935<sup>1</sup>

Daily delivered private-sale price in percentage of auction price	Number of days on which private-sale prices were in the indicated percentage group	Daily delivered private-sale price in percentage of auction price	Number of days on which private-sale prices were in the indicated percentage group
82.6- 85.0.....	1	100.1-102.5.....	3
85.1- 87.5.....	2	102.6-105.0.....	8
87.6- 90.0.....	1	105.1-107.5.....	7
90.1- 92.5.....	4	107.6-110.0.....	7
92.6- 95.0.....	7	110.1-112.5.....	6
95.1- 97.5.....	8	112.6-115.0.....	3
97.6-100.0.....	7	115.1-117.5.....	1

<sup>1</sup> Private sales made in following States: Connecticut, Illinois, Maine, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and Wisconsin. Data obtained from price reports of Bureau of Agricultural Economics. F. o. b. prices converted to delivered basis on estimates of type of freight service used furnished by Wenatchee Valley Traffic Association and Yakima Traffic and Credit Association. Auction prices obtained from price-realized catalogs of one auction company in New York. Auction data include 207 cars and private-sale data cover 519 cars. There were 65 sales days during the January 2-April 22, 1935 period for which price comparisons could be made.

### Auction Prices as Indicators of the Market Price

From the price comparisons developed in this study, the conclusion follows that over short periods of time, such as one week, auction prices are not to be regarded implicitly as definite measures of the final prices to be obtained in all markets, both auction and nonauction. Different factors momentarily may cause variations in the prices to be obtained in the various markets. These factors relate to fluctuations in the supply of the commodity, brand preferences, competing fruit situation, local consumer purchasing power, quality, including shipments which are off-condition, and other more intangible causes.

Price quotations and final prices realized are determined on a basis of the experience and skill possessed by seller and buyer. Economic analysis of short-time price fluctuations has not as yet proceeded to a point where it is possible to determine accurately the exact price at which a commodity can be sold. Under these circumstances, there is no doubt that the course followed by auction prices and the response in auction markets to changed conditions of supply and other price-determining factors are of highly significant value to

sales managements in determining the approximate market trend and current price levels of a commodity sold both at auction and private sale.

The necessity of properly gauging the quantities of the commodity to be offered for sale on each market, if prices to be obtained in both auction and nonauction markets are to be kept within a reasonable range, has already been pointed out for California Valencia oranges. It follows further that it is desirable to have a price-registering mechanism, such as important auctions where sufficient quantities of the commodity are sold, to constitute a reasonable indicator of the current price. The concentration of quantities of the commodity offered for sale and the bringing together at one point of a substantial portion of the buying trade in each of the auction markets make possible an immediate determination of the price situation in the larger markets. Lacking such a price-registering mechanism, the problem of determining quickly a reasonable basis of price quotation for a large marketing organization selling in many markets on a basis of terminal price could prove to be difficult. The problem would involve the job of bringing together widely scattered observations from sales representatives in many markets. Numerous fruit and vegetable commodities not sold by the auction method present this problem to sales managements. Comparative advantages of such procedures have not been a part of this study, notwithstanding their importance to sales managements confronted by the lack of determining which of alternative methods of selling should be employed.

Prices in auction markets have been shown to be responsive in an important degree to changes in the local supply situation. Sales managements charged with the responsibility of selling large volumes of fruit have found it necessary in order to obtain the highest possible total returns to keep all markets on as nearly a uniform price level as practicable. This policy implies that supplies will be placed in the various markets in a manner which will result in the same price in the several markets. This principle, recognized by outstanding sales managements in the cooperative field, has been dealt with in detail in a study of Tokay grape marketing (8, p. 58). Practical marketing considerations require that this procedure be followed insofar as possible.

In connection with this subject, it is worth while to call attention to recent studies (10) which suggest that the maximum returns for a specific crop can be attained by controlling distribution to the various markets in such manner as to take advantage of the different demand conditions. Such a procedure may imply that different prices for the same commodity would be in effect at the same time in various markets, provided the markets were independent to the extent that



physical transfer of the commodity between them was not practicable from the standpoints of costs incident to the transfer and the loss in quality incurred because of the extra handling. Application of this principle is dependent upon the satisfactory solution of a number of difficulties. In the studies previously referred to, it has been also pointed out that application of the principle is dependent upon adequate data and the necessary facts relative to demand conditions in each of the markets, and further that "there appear to be few studies which are detailed enough and exact enough to serve as accurate guides to inter-market distribution" (10).

Pending the development of such guides, the practical marketing policy appears to be one which results in the maintenance of prices on as uniform a level as possible. An application of this principle is illustrated by the analyses presented in this report. These show that, with very limited exceptions, prices of California Valencia and Navel oranges and lemons in the various auction markets have consistently maintained close relationships. Further, detailed analysis for one season shows that weekly auction- and private-sale prices of individual sizes of an important commodity, California Valencia oranges, have moved together quite closely.

Under existing conditions as disclosed by the various analyses made during this study, it appears that auction prices of California Valencia oranges constitute a reasonably satisfactory measure of price in private-sale markets, provided supplies in these markets are controlled. Variations in price between auction markets and private-sale markets suggest that auction prices are not final and complete indicators of the price at which total offerings of the commodity in all markets will be sold. They serve rather as indicators of the price level around which sales management and buyers at private sale reach a final price agreement which takes into account such considerations as local demand and supply conditions, differentials in brand prices, condition and quality of fruit, and other factors. Auction prices thus serve as indicators of price, but because they also reflect the demand and supply conditions prevailing in the individual operating area of each auction center, they cannot function as complete indicators of price within other market areas.

# Operating Aspects of Terminal Auction Companies

**I**N EXAMINING auctions as distributing mechanisms, it is desirable to look at them from such standpoints as (1) relative importance of each class of purchasers buying at auction, (2) the number of commodities purchased by individual buyers, (3) amounts of representative commodities purchased by auction buyers, (4) number of sizes of representative commodities purchased by buyers grouped according to quantity bought, (5) frequency of purchase, (6) customers purchasing from more than one auction, (7) relative importance of receivers, (8) auction company ownership, (9) units of sale, (10) auction selling and handling charges, and (11) attitude of buying trade toward the auction method of sale.

Other aspects having to do with operating efficiency of the auction method of selling will immediately come to mind, such as (1) fair and representative sampling, although auction sales are on an "as is" basis, and not warranted to be fairly represented by the packages open for inspection, (2) whether prices are identical for the same quality of merchandise offered concurrently on the same auction by different shippers, (3) collusion among buyers, (4) abuse of the division privilege, (5) price adjustment policies where several buyers purchase portions of a single line at a substantial range in prices, and (6) whether position on the daily auction schedule is an essential factor in producing differences in price.

It is readily apparent that questions of this type can be determined only by observation and study at the time sales are made. Evaluation of such factors and conclusions as to whether they operate satisfactorily or in a manner adverse to shippers' interests must, for the most part, be dependent upon watchfulness of shippers' auction representatives. In a study of the scope of the present survey, it has not been feasible to provide for the collection of the details necessary in attacking problems of this type.

## Relative Importance of Each Class of Auction Purchasers

In table 17 are presented percentages of the distribution of auction company billings of sales to different types of customers. Any analysis of this kind contains a considerable amount of approximation since many members of the fruit and vegetable trade perform more than one kind of marketing function, such as jobbers who also act at times

as buying brokers or carlot receivers. For the purposes of this study, each buyer was classified according to the type of service which represented the principal portion of his business.

TABLE 17.—DISTRIBUTION OF AUCTION COMPANY BILLINGS TO DIFFERENT TYPES OF CUSTOMERS IN 10 MARKETS, 1934-35<sup>1</sup>

Type of customer <sup>2</sup>	Balti- more	Bos- ton <sup>3</sup>	Chi- cago	Cin- cin- nati	Cleve- land	De- troit	New York	Phila- del- phia	Pitts- burgh	St. Louis	Total
Jobbers.....	55.5	59.2	79.5	82.0	75.4	78.3	70.8	58.9	80.0	63.7	70.5
Chain stores.....	12.5	20.0	4.4	6.8	16.0	7.3	7.3	19.3	10.6	9.5	9.5
Buying brokers <sup>4</sup> .....	18.6	4.0	.3	.2	.....	8.0	10.5	12.6	3.6	.....	7.9
Motor truck jobbers.....	.9	3.4	11.7	.8	2.6	.8	1.8	.2	.9	14.2	2.3
Specialty fruit and vegetable stores.....	.....	3.5	.....	.....	4.4	.....	3.8	.....	.....	3.6	2.5
Retail stores (independent).....	10.6	2.6	3.8	5.7	.....	.4	.....	8.4	2.9	5.2	2.3
Peddlers and pushcarts.....	.8	2.3	.1	2.8	.3	4.9	.3	.2	.6	.7	.7
Wholesale grocers.....	.....	2.4	.....	.5	1.2	.....	.1	.....	.....	1.3	.2
Miscellaneous and unclassi- fied <sup>4</sup> .....	1.1	2.6	.2	1.2	.1	.3	5.4	.2	.4	1.8	3.1
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Data for companies located in Baltimore, Boston (2 companies), Chicago, Cincinnati, Cleveland, Detroit, New York (2 companies), Philadelphia, Pittsburgh, and St. Louis. Percentages based on transactions for weeks of Sept. 10-15 and Dec. 10-15, 1934, and Mar. 11-16 and June 10-15, 1935, for all markets except Boston. Boston figures for 2 companies based on 2 1935 weeks only. Total value of transactions for 4 weeks was \$8,812,015.

<sup>2</sup> Auction customers were classified as to types by auction company managers, credit managers, and others. Buyers were classified according to the type of the principal portion of their business.

<sup>3</sup> All purchases by buying brokers or others acting as buyer representatives, wherever auction company billing is made direct to the principals, have been included in the customer group to which the principals belong.

<sup>4</sup> This item includes cash sales which have not been distributed to type of customer. Almost 90 percent of the undistributed amount of this item represents totals of the 2 New York auction companies.

The figures in table 17 are illustrative, however, of the use made of the auctions by various types of distributors. Retailers and others such as hotels and restaurants, steamship lines, etc., use buying representatives to a considerable extent in acquiring their supplies of auction commodities.

The activities of buying brokers are in some instances somewhat obscured by the scheme of tabulation followed in table 17. All auction purchases have been distributed to the various customer groups wherever billings were made direct by the auction company to the customer even though purchase was initially made by a buying broker or another representative acting in the capacity of a buying broker. Other members of the trade, such as jobbers, sometimes act as buying brokers, for undisclosed principals.

In some markets, buying broker activities are negligible. In others, significant proportions of the business of these auctions are carried on through these operators,

## Number of Commodities Purchased by Individual Buyers

While the type of customer is of importance, information regarding the number of commodities he buys and the size of his purchases is of more importance to the seller.

In table 18 is shown a distribution of the commodity purchases of 1,084 separate buyers of 10 auction companies located in 9 markets other than New York. The data for the two companies in New York are presented elsewhere as they were not obtained on a comparable basis. The analysis covers a 1-week period, March 11-15, 1935, and includes all buyers who were classified according to the customer types shown in table 17.

TABLE 18.—BUYERS OF 10 AUCTION COMPANIES GROUPED ACCORDING TO PURCHASES OF CALIFORNIA ORANGES AND LEMONS, FLORIDA ORANGES AND GRAPEFRUIT, AND NORTHWESTERN APPLES DURING WEEK OF MAR. 11-15, 1935<sup>1</sup>

Commodities purchased <sup>2</sup>	Percentages of number of buyers and value of purchases									
	California oranges		California lemons		Florida oranges		Florida grapefruit		Northwestern apples	
	Buyers	Purchases	Buyers	Purchases	Buyers	Purchases	Buyers	Purchases	Buyers	Purchases
<b>Single commodity:</b>										
California oranges only.....	5.7	2.0								
California lemons only.....			2.2	2.0						
Florida oranges only.....					6.2	2.3				
Florida grapefruit only.....							2.4	0.8		
Northwestern apples only.....									2.5	0.5
Total single commodity.....	5.7	2.0	2.2	2.0	6.2	2.3	2.4	.9	2.5	.5
<b>2 commodity group:<sup>3</sup></b>										
CO, CL.....	2.8	1.3	4.4	4.5						
CO, FO.....	4.6	1.8			4.1	1.6				
CO, FG.....	2.7	.7					2.2	.7		
CO, NWA.....	2.4	.7							2.1	1.4
CL, FO.....			1.1	.2	.7	(4)				
CL, FG.....			.9	.4			.7	.4		
CL, NWA.....			.7	.3					.6	.4
FO, FG.....					4.8	1.4	5.6	1.4		
FO, NWA.....					2.2	.7			2.8	1.3
FG, NWA.....							1.1	.4	1.3	.6
Total 2 commodities.....	11.9	4.5	7.1	5.4	11.8	2.7	10.6	2.9	7.8	2.5
<b>3 commodity group:<sup>3</sup></b>										
CO, CL, FO.....	2.2	1.5	4.9	2.8	2.3	1.5				
CO, FO, FG.....	7.1	2.9			7.2	2.4	2.4	2.8		
CO, CL, FG.....	2.0	1.3	2.1	1.4				1.1		
CO, CL, NWA.....	1.4	1.4	2.2	1.7					1.9	1.6
CO, FO, NWA.....	5.3	2.6			5.4	1.6			7.0	4.7
CO, FG, NWA.....	1.8	.7					2.1	.7	2.3	1.2
CL, FO, FG.....			2.0	1.0	1.2	.5	1.5	.6		
CL, FO, NWA.....			.9	.3	.8	.2			.5	.2
CL, FG, NWA.....			.9	.3			.7	.2	.8	.1
FO, FG, NWA.....					2.2	.5	2.5	.9	2.9	.7
Total 3 commodities.....	20.5	10.5	14.0	8.2	20.9	7.7	17.4	7.2	15.6	6.5

See footnotes at end of table.

TABLE 18.—BUYERS OF 10 AUCTION COMPANIES GROUPED ACCORDING TO PURCHASES OF CALIFORNIA ORANGES AND LEMONS, FLORIDA ORANGES AND GRAPEFRUIT, AND NORTHWESTERN APPLES DURING WEEK OF MAR. 11—15, 1935.—Continued

Commodities purchased	Percentages of number of buyers and value of purchases									
	California oranges		California lemons		Florida oranges		Florida grapefruit		Northwestern apples	
	Buyers	Purchases	Buyers	Purchases	Buyers	Purchases	Buyers	Purchases	Buyers	Purchases
<b>4 commodity group:<sup>1</sup></b>										
CO, CL, FO, FG.....	7.8	8.0	12.0	11.4	7.9	8.3	9.2	11.3		
CO, FO, FG, NWA.....	14.1	8.2			14.3	11.8	16.6	10.0	18.5	11.7
CO, CL, FG, NWA.....	3.0	3.4	4.7	2.4			3.6	2.3	4.0	1.6
CO, CL, FO, NWA.....	5.2	7.9	8.0	7.9	5.3	5.3			6.9	12.6
CL, FO, FG, NWA.....			3.8	1.2	2.5	1.2	2.9	1.1	3.3	.9
Total 4 commodities.....	30.1	27.5	28.5	22.9	30.0	26.6	32.3	24.7	32.7	26.8
<b>5 commodity group:<sup>2</sup></b>										
CO, CL, FO, FG, NWA.....	31.5	55.5	48.2	60.4	32.0	59.7	37.1	64.2	41.4	60.7
Total 5 commodities.....	31.5	55.5	48.2	60.4	32.0	59.7	37.1	64.2	41.4	60.7
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Data from auction companies at Baltimore, Boston (2 companies), Chicago, Cincinnati, Cleveland, Detroit, Philadelphia, Pittsburgh, and St. Louis.

<sup>2</sup> Percentages of purchases of 5 commodities by buyers included in this tabulation represent 99.3 percent of total California orange transactions; 99.8 percent for California lemons; 99.3 percent for Florida oranges; 99.6 percent for Florida grapefruit; and 99.2 percent for Northwestern apples. Transactions omitted from the tabulation include primarily railroad claims, and purchases by individuals and others who are not members of the local distributing trade. Total value of 5 commodities bought by classified purchasers is 91.5 percent of total value of all commodities sold by indicated auctions during the week of Mar. 11—15, 1935. Data include following number of buyers: California oranges, 848; California lemons, 554; Florida oranges, 832; Florida grapefruit, 717; Northwestern apples, 642. A total of 1,084 individual buyers is represented after eliminating duplications. Values of transactions on which percentages are based were: California oranges, \$411,897; California lemons, \$68,315; Florida oranges, \$229,364; Florida grapefruit, \$102,488; Northwestern apples, \$125,409.

<sup>3</sup> Abbreviations refer to commodities shown in "Single-commodity" group.

<sup>4</sup> Less than 0.1 percent.

The 5 commodities, California oranges and lemons, Florida oranges and grapefruit, and Northwestern apples, on which table 18 is based, comprised 91.5 percent of the total transactions of the 10 auction companies for the week. The remainder of the commodities sold during the week were not used since all of the commodities were not sold by all 10 auctions. The 91.5 percent sample is, however, fully adequate.

The buyers whose records were analyzed in order to develop a measure of the extent to which auction customers bought more than one commodity represented practically all transactions of the 10 companies in these commodities for the test week, in all cases accounting for over 99 percent of the total.

Seventy-eight percent of the total 1,084 buyers, or 846, purchased California oranges. While not shown directly as totals in table 18, it can be determined that the 846 California orange buyers purchased 93.3 percent of all the California lemons sold to classified purchasers during the week as well as 93.2 percent of the Florida oranges, 94.1 percent of the Florida grapefruit, and 95.5 percent of the Northwestern apples.

A further examination of table 18 reveals that 31.5 percent of the California orange buyers, 48.2 percent of the lemon buyers, 32.0 percent of the Florida orange buyers, 37.1 percent of the Florida grapefruit buyers bought all five commodities during the week. These groups of purchasers acquired the major portions of the five commodities, equaling in all cases well over 50 percent of the amounts sold. Generally speaking then, the larger buyers of each commodity were also the heavier buyers of the four remaining commodities.

In the New York auction market, the volume of transactions and the large number of customers required a somewhat different approach than in the nine other auction markets. The nature of the records also eliminated for the purpose of the study the taking of a proportionate sample of the detailed transactions for the two auction companies on this market.

Results of the analysis showing the extent to which customers of the two New York auction companies purchased one or more commodity groups for the week of March 11-15, 1935, are presented in combined form in table 19. Duplications in customer count arising from purchases from the two companies have been eliminated, leaving a total of 685 buyers.

It will be noted that for Western deciduous and California and Florida citrus, purchasers who bought from a single commodity group were limited both in number and in relative importance of the quantities secured. Tomato and banana buyers tended toward buying one commodity only. If tomato and banana purchases are not taken into consideration, and if the purchases of buyers who bought during the week in the three-commodity group are combined, it will be found that these buyers constituted 83.7 percent of the Western deciduous purchasers, 82.8 percent of the California citrus, and 79.2 percent of the Florida citrus. Their respective purchases of these commodities totaled 92.8, 92.1, and 92.9 percent of the total of all purchases by classified buyers during the sample week.

It is quite evident from these analyses of the number of commodities purchased by New York auction buyers and in the nine other auction markets that a very substantial volume of auction sales is made to purchasers who buy a number of commodities rather than one or two. From the standpoint of cooperative associations employing the auction method of sale, this fact has especial significance. While

TABLE 19.—BUYERS OF 2 NEW YORK AUCTION COMPANIES GROUPED ACCORDING TO PURCHASES OF WESTERN DECIDUOUS, CALIFORNIA CITRUS, FLORIDA CITRUS, TOMATOES, AND BANANAS DURING WEEK OF MAR. 11-15, 1935

Commodities purchased <sup>1</sup>	Percentages of number of buyers and value of purchases									
	Western deciduous		California citrus		Florida citrus		Tomatoes		Bananas	
	Buy-ers	Pur-chases	Buy-ers	Pur-chases	Buy-ers	Pur-chases	Buy-ers	Pur-chases	Buy-ers	Pur-chases
<b>Single commodity:</b>										
Western deciduous only.....	7.2	4.2								
California citrus only.....			3.7	1.0						
Florida citrus only.....					7.4	2.1				
Tomatoes only.....							39.2	46.5		
Bananas only.....									94.1	86.1
Total single commodity.....	7.2	4.2	3.7	1.0	7.4	2.1	39.2	46.5	94.1	84.1
<b>2 commodity group: <sup>2</sup></b>										
WD, CC.....	3.1	1.5	3.1	2.8						
WD, FC.....	2.5	.7			2.4	.5				
WD, T.....	1.0	.2					1.4	.8		
CC, FC.....			7.1	3.6	6.8	3.5				
CC, T.....			.5	.1			1.0	( <sup>3</sup> )		
CC, B.....			.8	( <sup>3</sup> )					.4	.2
FC, T.....					1.5	.5	2.4	4.1		
T, B.....							5.3	3.3	4.6	6.2
Total 2 commodities.....	6.6	2.4	11.1	6.6	10.7	4.5	10.1	8.2	5.0	6.4
<b>3 commodity group: <sup>3</sup></b>										
WD, CC, FC.....	49.9	47.1	49.3	51.3	47.1	48.1				
WD, CC, T.....	.6	.1	.6	.1			1.0	.7		
WD, CC, B.....	.3	( <sup>3</sup> )	.3	( <sup>3</sup> )					.4	1.7
WD, FC, T.....	1.6	.5			1.5	.4	2.4	1.7		
CC, FC, T.....			.9	.2	.9	.1	1.4	.3		
CC, T, B.....			.3	.1			.5	1.6	.4	.1
Total 3 commodities.....	52.4	47.7	51.4	51.7	49.5	48.6	5.3	4.3	.9	1.8
<b>4 commodity group: <sup>3</sup></b>										
WD, CC, FC, T.....	28.6	29.1	28.3	28.9	25.2	31.4	41.0	35.7		
WD, CC, FC, B.....	4.7	6.1	4.7	5.6	4.6	4.8			6.3	4.9
CC, FC, T, B.....			.3	( <sup>3</sup> )	.3	( <sup>3</sup> )	.5	( <sup>3</sup> )	.4	.3
Total 4 commodities.....	31.3	35.3	31.3	31.5	30.0	36.2	41.5	35.7	6.7	6.2
<b>5 commodity group: <sup>3</sup></b>										
WD, CC, FC, T, B.....	2.5	10.5	2.5	9.3	2.4	8.6	3.9	5.3	3.4	2.5
Total 5 commodities.....	2.5	10.5	2.5	9.3	2.4	8.6	3.9	5.3	3.4	2.5
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Purchases of Western deciduous fruit represent 93.8 percent of total transactions for the week; California citrus fruit, 95.6 percent; Florida citrus fruit, 94.5 percent; tomatoes, 93.3 percent; bananas, 100.0 percent. Transactions omitted from the tabulation include primarily sales to cash customers, railroad claims, and purchases by individuals and others not members of the local distributing trade. Total value of 5 commodities is 95.0 percent of the total value of all-commodity transactions of New York auctions during the week. Data include the following number of buyers: Western deciduous, 319; California citrus, 323; Florida citrus, 337; tomatoes, 207; and bananas, 239. A total of 635 buyers is represented after eliminating duplications. Values of transactions on which percentages in table are based are: Western deciduous fruit, \$155,447; California citrus fruit, \$191,205; Florida citrus fruit, \$375,089; tomatoes, \$154,109; bananas, \$107,548.

<sup>2</sup> Abbreviations refer to commodities shown in "Single-commodity" group.

<sup>3</sup> Less than 0.1 percent.

the conclusion is based on 1 week's transactions only, inspection of the purchase records for the remaining 3 weeks for which data were obtained showed definitely that quite similar results would be found if the data for these weeks were subjected to the same form of analysis. The study demonstrated that the majority of auction buyers purchase a number of commodities in order to take full advantage of the time and effort required to inspect auction offerings and attend the sales.

### Quantities Purchased by Auction Buyers

One of the important considerations with respect to sale at auction relates to the quantities purchased by individual buyers during a

TABLE 20.—AUCTION BUYERS ON EIGHT MARKETS GROUPED ACCORDING TO NUMBER OF BOXES OF CALIFORNIA NAVAL ORANGES PURCHASED DURING WEEK OF MAR. 11-16, 1935<sup>1</sup>

Boxes purchased during week	Buyers purchasing			Quantity purchased			
	Number	Percentage of total	Cumulative percentage	Boxes	Percentage of total	Cumulative percentage	Average boxes per buyer
1-100.....	390	54.6	54.6	16,791	12.7	12.7	43
101-200.....	146	20.4	75.0	21,235	16.1	28.8	145
201-300.....	61	8.5	83.5	15,039	11.4	40.2	246
301-400.....	33	4.6	88.1	11,267	8.5	48.7	341
401-500.....	29	4.1	92.2	13,035	9.9	58.6	449
501-600.....	14	2.0	94.2	7,541	5.7	64.3	539
601-700.....	8	1.1	95.3	5,186	3.9	68.2	648
701-800.....	9	1.3	96.6	6,781	5.1	73.3	753
801-900.....	6	.8	97.4	5,100	3.9	77.2	850
901-1,000.....	2	.3	97.7	1,920	1.5	78.7	960
1,001-1,100.....	4	.6	98.3	4,313	3.3	82.0	1,078
1,101-1,200.....	2	.3	98.6	2,218	1.7	83.7	1,109
1,201-1,300.....	2	.3	98.9	2,485	1.9	85.6	1,242
1,301-1,400.....	2	.3	99.2	2,778	2.1	87.7	1,389
1,401-1,500.....							
Over 1,500 <sup>2</sup> .....	6	.8	100.0	16,237	12.3	100.0	2,706
Total.....	714	100.0		<sup>3</sup> 131,926	100.0		185

<sup>1</sup> Tabulation includes auction companies at Baltimore, Boston, Chicago, Cleveland, Detroit, Philadelphia, Pittsburgh, and St. Louis. If Cleveland is eliminated from this tabulation in order to include only those auctions shown in table 21 for California Valencia oranges, it is found that there are no significant changes. Accordingly, the larger number of markets is used.

<sup>2</sup> This group includes buyers as follows: 1,500-1,800 boxes, 3 buyers; 2,000-2,100, 1 buyer; 3,900-3,900, 1 buyer; 5,400-5,500, 1 buyer.

<sup>3</sup> Total represents over 99 percent of all auction transactions in this commodity for the week. Items left out include sales to auction employees and others, and boxes for which size data were not readily available.



relatively short period of time. One week was taken for the purpose of inquiry.

An analysis of weekly purchases of California Navel oranges by buyers on eight auction markets during the week of March 11-16, 1935, is presented in table 20. This tabulation brings out the fact that over 90 percent of the 714 buyers purchased less than one carload of 462 boxes of California Navel oranges during the week. The same group of buyers purchased only 58.6 percent of the total number of boxes sold. This leaves 7.8 percent, or a total of 55, who purchased the equivalent of a carload and over during the week. This group, however, bought 41.4 percent of the total number of boxes sold during the week in the eight markets.

TABLE 21.—AUCTION BUYERS ON 7 MARKETS GROUPED ACCORDING TO NUMBER OF BOXES OF CALIFORNIA VALENCIA ORANGES PURCHASED DURING WEEK OF JUNE 10-15, 1935 <sup>1</sup>

Boxes purchased during week	Buyers purchasing			Quantity purchased			
	Number	Percentage of total	Cumulative percentage	Boxes	Percentage of total	Cumulative percentage	Average boxes per buyer
1-100.....	310	44.6	44.6	15,108	8.5	8.5	49
101-200.....	154	22.1	66.7	22,211	12.5	21.0	144
201-300.....	73	10.5	77.2	18,019	10.2	31.2	247
301-400.....	36	5.2	82.4	12,327	7.0	38.2	342
401-500.....	32	4.6	87.0	14,416	8.1	46.3	450
501-600.....	12	1.7	88.7	6,613	3.7	50.0	551
601-700.....	22	3.1	91.8	14,289	8.1	58.1	649
701-800.....	11	1.6	93.4	8,079	4.6	62.7	734
801-900.....	8	1.1	94.5	6,913	3.9	66.6	864
901-1,000.....	4	.6	95.1	3,789	2.1	68.7	947
1,001-1,100.....	2	.3	95.4	2,059	1.2	69.9	1,029
1,101-1,200.....	5	.8	96.2	5,627	3.2	73.1	1,125
1,201-1,300.....	4	.6	96.8	4,947	2.8	75.9	1,237
1,301-1,400.....	7	1.0	97.8	9,376	5.3	81.2	1,339
1,401-1,500.....	2	.3	98.1	2,862	1.6	82.8	1,431
Over 1,500 <sup>2</sup> .....	13	1.9	100.0	30,387	17.2	100.0	2,337
Total.....	695	100.0		<sup>3</sup> 177,022	100.0		255

<sup>1</sup> Tabulation includes auction companies at Baltimore, Boston, Chicago, Detroit, Philadelphia, Pittsburgh, and St. Louis.

<sup>2</sup> This group includes buyers as follows: 1,501-1,600 boxes, 2 buyers; 1,601-1,700, 3 buyers; 1,701-1,800, 3 buyers; 1,801-1,900, 2,401-2,500, 2,601-2,700, 4,801-4,900, and 5,201-5,300, 1 buyer each.

<sup>3</sup> Total includes all sales except 571 boxes sold to "unclassified" purchasers.

Similar results were obtained for California Valencia oranges sold during the week of June 10-15, 1935, as shown in table 21 for seven auction markets. The tabulation is based on 99.7 percent of the sales of this variety of orange made on the seven auction markets during the week. About 87 percent of the 695 auction buyers purchased less than one carload each per week. This group of buyers purchased 46.3 percent of the total quantity bought by all purchasers included in the tabulation. The remaining 53.7 percent of the commodity was bought by 13 percent of the buyers whose average purchases ranged from 551 to 2,337 boxes.

For Northwestern Winesap apples in boxes during the week of March 11-16, 1935, there was a total of 303 buyers, all of whom purchased less than one carload of 756 boxes. The range of average purchases was between 42 and 595 boxes, as shown in table 22. Almost 80 percent of the buyers purchased less than 100 boxes of this one variety during the week.

In the New York auction market data were compiled on a dollar basis, as it was not practicable from the standpoint of the Division to bring the information together on a box basis, because of the large volume of transactions. Accordingly, the data for New York buyers are shown on the basis of value of purchase rather than quantity.

TABLE 22.—AUCTION BUYERS ON 8 MARKETS GROUPED ACCORDING TO NUMBER OF BOXES OF NORTHWESTERN WINESAP APPLES PURCHASED DURING THE WEEK OF MAR. 11-16, 1935<sup>1</sup>

Boxes purchased during week	Buyers purchasing indicated quantity			Quantity purchased			
	Number	Per cent	Cumulative per centage	Boxes	Per cent	Cumulative per centage	Average boxes per buyer
1-100.....	240	79.2	79.2	10,040	44.9	44.9	42
101-200.....	41	13.5	92.7	5,776	25.8	70.7	141
201-300.....	15	5.0	97.7	3,573	16.0	86.7	238
301-400.....	3	1.0	98.7	1,013	4.5	91.2	338
401-500.....	3	1.0	99.7	1,385	6.2	97.4	462
501-600.....	1	.3	100.0	595	2.6	100.0	595
Total.....	303	100.0		22,382	100.0		74

<sup>1</sup> Includes auction markets as follows: Baltimore, Boston (1 company only), Chicago, Cleveland, Detroit, Philadelphia, Pittsburgh, and St. Louis. Size groups as follows: 64, 72, 80, 88, 100, 113, 125, 138, 150, 163, 175, 180, 198, 215, 234, 252.

The facts revealed by table 23 are similar to those brought out in tables 20, 21, and 22. For example, the first three groups of Western deciduous buyers, or 75.3 percent of the total number of purchasers, bought 35.8 percent of the total amount of this commodity group handled by the two New York auction companies during the week. For California citrus, the corresponding percentages were 72.8 and 33.4, and for Florida citrus, 48.1 and 11.3. Table 20 shows that 75.0 percent of the purchasers of California Navel oranges in eight auction markets bought only 28.8 percent of the total quantity of this commodity sold in eight auction markets. Similar figures for auction purchases of California Valencia oranges in seven markets during the

TABLE 23.—DISTRIBUTION OF NEW YORK AUCTION BUYERS ACCORDING TO WEEKLY PURCHASES OF WESTERN DECIDUOUS FRUIT, CALIFORNIA CITRUS FRUIT, AND FLORIDA CITRUS FRUIT DURING WEEK OF MAR. 11-16, 1935<sup>1</sup>

Amounts purchased weekly	Western deciduous fruit		California citrus fruit		Florida citrus fruit	
	Percentage of buyers	Percentage of sales	Percentage of buyers	Percentage of sales	Percentage of buyers	Percentage of sales
\$1-\$200.....	36.7	7.3	28.5	4.8	23.1	2.3
\$201-\$400.....	25.1	15.3	25.7	12.9	12.5	3.5
\$401-\$600.....	13.5	13.2	18.6	15.7	12.5	5.5
\$601-\$800.....	9.7	13.5	6.8	7.8	7.7	4.8
\$801-\$1,000.....	4.4	7.9	6.2	9.4	9.2	7.3
\$1,001-\$1,200.....	3.5	7.8	3.7	6.8	4.7	4.6
\$1,201-\$1,400.....	1.3	3.3	3.1	6.7	4.4	5.3
\$1,401-\$1,600.....	1.6	4.8	.9	2.4	5.0	6.8
\$1,601-\$1,800.....	.6	2.3	1.6	4.5	1.5	2.3
\$1,801-\$2,000.....	.9	3.6	.9	3.0	3.9	6.5
\$2,001-\$2,200.....	.3	1.3	.3	1.1	1.8	3.3
\$2,201-\$2,400.....	.6	2.9			2.4	4.9
\$2,401-\$2,600.....	.3	1.7	.9	3.9	2.4	5.3
\$2,601-\$2,800.....	.3	1.7	.9	4.1	1.2	2.9
\$2,801-\$3,000.....	.3	1.9	.3	1.5	1.5	3.9
Over \$3,000.....	.9	11.5	1.6	15.4	6.2	30.8
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Weekly purchases represent amounts bought on both New York auctions. Duplications in buyer count arising through purchases on both auctions by a single buyer have been eliminated. Purchases of Western deciduous fruit represent 99.8 percent of the New York auction transactions in this commodity group for the week; California citrus fruit, 95.6 percent; Florida citrus fruit, 94.5 percent. Transactions omitted include primarily sales to cash customers, purchases by individuals and others not members of the local distributing trade, and amounts involved in railroad claims. Numbers of buyers were as follows: Western deciduous fruit, 319; California citrus fruit, 323; and Florida citrus fruit, 337. Refer also to table 19, footnote 1.

TABLE 24.—DISTRIBUTION OF AUCTION BUYERS ACCORDING TO NUMBER OF BOXES OF SPECIFIED COMMODITIES PURCHASED DURING WEEK OF MAR. 11-16, 1935<sup>1</sup>

Commodity and auction market	Number of buyers	Percentage distribution of auction buyers in each market according to number of boxes purchased													Total number of boxes
		1-50	51-100	101-200	201-300	301-400	401-500	501-600	601-700	701-800	801-900	901-1,000	Over 1,000		
<b>California oranges:</b>															
Baltimore.....	53	73	19	92	2	2	2	2							2,717
Boston.....	166	58	20	58	28	8	8	2	1	1				1	27,848
Chicago.....	85	8	12	21	20	13	11	8	4	6	4	6	1	6	21,732
Cincinnati.....	108	77	11	88	7	4	1								4,873
Cleveland.....	99	45	21	68	11	9	2	7	1				1	3	13,749
Detroit.....	78	21	16	37	35	3	5	9	2	1	1			6	18,006
Philadelphia.....	126	47	24	71	12	8	4	1	1	1				1	17,397
Pittsburgh.....	89	40	21	61	19	9	4	1		1	1	3		1	11,571
St. Louis.....	70	20	14	34	37	10	7	4	3	3				2	14,127
Total.....	846	42	18	60	18	8	8	2	1	1	1	1	(?)	2	142,456
<b>Florida oranges:</b>															
Baltimore.....	67	78	15	98	4		3								2,956
Boston.....	147	49	27	76	14	5	2	1			1		1		12,822
Chicago.....	78	18	17	35	28	17	15	4				1			14,109
Cincinnati.....	115	64	19	83	10	3	2	1	1						7,498
Cleveland.....	85	49	25	74	16	6	1	1	1					1	8,322
Detroit.....	30	64	15	79	18	3									2,980
Philadelphia.....	161	29	22	51	17	12	3	2	2	2	3	2	2	3	26,102
Pittsburgh.....	85	80	15	74	12	7	1	2	1	2	1				8,878
St. Louis.....	55	71	16	87	5	4	4								3,180
Total.....	832	50	20	70	14	7	4	1	1	1	1	(?)	(?)	1	98,666
<b>Florida grapefruit:</b>															
Baltimore.....	42	88	7	95	5										1,182
Boston.....	120	56	23	79	12	7		1				1			11,440
Chicago.....	44	50	27	77	21	2									3,106
Cincinnati.....	126	67	17	84	12	2	1				1				7,206
Cleveland.....	82	66	19	78	18	2	2			2				1	7,342
Detroit.....	83	58	21	79	15	2		4							3,736
Philadelphia.....	136	57	17	74	10	10	1	1	1	1		1		1	16,227
Pittsburgh.....	76	69	16	85	8		4	1		1		1			8,661
St. Louis.....	29	80	14	94	3		3								1,318
Total.....	717	62	18	81	12	4	1	1	(?)	(?)	(?)	(?)		1	87,219
<b>Northwestern apples:</b>															
Baltimore.....	21	90	10	100											624
Boston.....	96	52	22	74	14	7	1	1	1	1		1			8,721
Chicago.....	76	11	9	20	13	16	9	13	11	4	2			12	32,518
Cincinnati.....	84	64	23	87	7	1	1	4							5,791
Cleveland.....	83	51	20	71	20	7		1		1					7,106
Detroit.....	63	71	21	92	4	4									2,492
Philadelphia.....	120	45	22	67	16	9	1	4	1		1			1	13,724
Pittsburgh.....	80	66	12	78	12	4	6								3,461
St. Louis.....	60	22	28	80	26	11	5	5	2		2				8,006
Total.....	643	48	20	66	14	8	2	3	2	1	(?)	(?)		2	88,215

<sup>1</sup> Buyers include only those whose names appeared on the account records of the auction companies. Quantities represented by the tabulation exceed 99 percent of total transactions of each of the four commodities for the 10 auction companies in 9 markets, exclusive of nontrade items such as sales to nondistributing members of the trade, i. e., auction-company employees, receivers, etc.

<sup>2</sup> Percentage representing 2 buyers was less than 1.0.

<sup>3</sup> Percentage representing 4 buyers was less than 1.0.

<sup>4</sup> Percentage representing 3 buyers was less than 1.0.

<sup>5</sup> Percentage representing 1 buyer was less than 1.0.

Source of data: Auction company records.

TABLE 25.—NUMBER OF AUCTION BUYERS AND AVERAGE NUMBER OF BOXES OF SPECIFIED COMMODITIES PURCHASED DURING WEEK OF MAR. 11-16, 1935<sup>1</sup>

Auction	California oranges		California lemons		Florida oranges		Florida grapefruit		Northwestern apples	
	Number of buyers	Boxes per buyer	Number of buyers	Boxes per buyer	Number of buyers	Boxes per buyer	Number of buyers	Boxes per buyer	Number of buyers	Boxes per buyer
Baltimore.....	53	51	40	60	67	44	42	28	21	30
Boston.....	165	167	92	41	147	87	130	88	88	102
Chicago.....	85	373	69	101	78	181	44	71	76	428
Cincinnati.....	103	45	81	30	116	65	125	58	84	69
Cleveland.....	89	154	69	58	85	98	82	88	83	86
Detroit.....	75	252	41	58	39	53	53	71	53	47
Philadelphia.....	126	138	72	58	161	224	136	119	130	121
Pittsburgh.....	80	145	58	59	85	101	78	74	50	69
St. Louis.....	70	202	29	38	55	58	29	45	60	148
Total.....	846	168	551	55	832	115	717	89	643	138

<sup>1</sup> See footnote 1, table 24.

Source of data: Auction company records.

week of June 10-15, 1935, were 77.2 and 31.2. The relative importance of auction buyers according to the volume of their purchases is quite well established by the various tabulations. It is apparent that when 1 week is taken as a base, auction buyers are overwhelmingly not carlot purchasers of single commodities.

Tables 20, 21, and 22 show summaries for several markets. As there is considerable variation apparent among the different markets, more detailed information is presented in tables 24 and 25. Table 24 shows auction buyers of California and Florida oranges, Florida grapefruit, and Northwestern apples grouped according to quantity purchased. This table, together with table 25, discloses the extent to which auction purchasers are buyers of limited quantities of important auction commodities when a single week is taken as a time unit. California oranges are customarily loaded 462 boxes to the car and lemons 348 boxes. Florida oranges and grapefruit are usually loaded 400 boxes to the car, while Northwestern apples are shipped 756 boxes to the car. There are departures at times from these figures, but they will serve to demonstrate the significant extent to which auction buyers are less-than-carlot purchasers.

### Number of Sizes Purchased

A somewhat different phase of the analysis of purchases by individual auction buyers is found in table 26. This tabulation is based on the number of different sizes of California Navel oranges bought by individual auction buyers on eight markets during the week of

TABLE 26.—AUCTION BUYERS ON 8 MARKETS GROUPED ACCORDING TO NUMBER OF SIZES OF CALIFORNIA NAVAL ORANGES PURCHASED DURING WEEK OF MAR. 11-16, 1935<sup>1</sup>

Number of sizes bought by each purchaser during week <sup>2</sup>	Buyers purchasing			Quantity purchased			
	Number	Per- cent of total	Cumu- lative per- centage	Boxes	Per- cent of total	Cumu- lative per- centage	Average number of boxes per buyer
1.....	143	20.0	20.0	3,509	2.7	2.7	25
2.....	128	17.9	37.9	6,908	5.2	7.9	54
3.....	120	16.8	54.7	14,192	10.8	18.7	118
4.....	75	10.5	65.2	13,330	10.1	28.8	178
5.....	65	9.1	74.3	18,857	14.3	43.1	290
6.....	63	8.8	83.1	14,922	11.3	54.4	237
7.....	40	5.6	88.7	15,594	11.8	66.2	390
8.....	31	4.4	93.1	11,205	8.5	74.7	361
9.....	20	2.8	95.9	13,590	10.3	85.0	680
10.....	19	2.7	98.6	13,464	10.2	95.2	709
11.....	10	1.4	100.0	6,355	4.8	100.0	636
Total.....	714	100.0	-----	131,926	100.0	-----	186

<sup>1</sup> Data for auction companies at Baltimore, Boston, Chicago, Cleveland, Detroit, Philadelphia, Pittsburgh, and St. Louis.

<sup>2</sup> Size groups were as follows: 80 and larger, 96, 100, 126, 150, 176, 200, 216, 242, 268, 324, 344, 360, 392, and smaller.

March 11-16, 1935. This table reveals that the dominant portion of the 714 buyers purchased only a limited number of sizes. About two-thirds (65.2 percent) of the purchasers bought four sizes or less. This large group of buyers, however, took only 28.8 percent of the total sales to the entire group of 714 purchasers.

Auction buyers of California Valencia oranges in seven markets (see table 27) followed practices somewhat similar to those noted in table 26 for Navel orange purchasers. Buyers of five sizes or less equaled almost two-thirds (64.6 percent) of the total 695 purchasers. They bought, however, only 25.1 percent of the California Valencia oranges sold by the auction companies in the seven markets during the week of June 10-15, 1935. It was necessary, however, to reach down into the group of buyers acquiring eight or more sizes before the cumulative purchases of this commodity exceeded 50 percent.

An interesting point in connection with the data in table 27 is the fact that the single group of purchasers buying nine sizes bought 25.6 percent of the oranges sold at auction on the seven markets during the sample week. This group comprised but 7.3 percent of the total

TABLE 27.—AUCTION BUYERS ON 7 MARKETS GROUPED ACCORDING TO NUMBER OF SIZES OF CALIFORNIA VALENCIA ORANGES PURCHASED DURING WEEK OF JUNE 10-15, 1935 <sup>1</sup>

Number of sizes bought by each purchaser during week <sup>2</sup>	Buyers purchasing			Quantity purchased			
	Number	Per- cent of total	Cumu- lative per- centage	Boxes	Per- cent of total	Cumu- lative per- centage	Average number of boxes per buyer
1-----	87	12.5	12.5	2,618	1.5	4.8	30
2-----	97	14.0	26.5	5,874	3.3	4.8	61
3-----	80	11.5	38.0	6,852	3.9	8.7	86
4-----	103	14.8	52.8	13,893	7.8	16.5	135
5-----	82	11.8	64.6	15,314	8.6	25.1	187
6-----	65	9.4	74.0	17,268	9.8	34.9	266
7-----	61	8.8	82.8	26,311	14.9	49.8	431
8-----	44	6.3	89.1	19,104	10.8	60.6	434
9-----	51	7.3	96.4	45,303	25.6	86.2	888
10-----	19	2.7	99.1	15,912	9.0	95.2	837
11-----	6	.9	100.0	8,573	4.8	100.0	1,429
Total-----	695	100.0	-----	177,022	100.0	-----	255

<sup>1</sup> Data for auction companies at Baltimore, Boston, Chicago, Detroit, Philadelphia, Pittsburgh, and St. Louis.

<sup>2</sup> Size groups were as follows: 80 and larger, 96, 100, 126, 150, 176, 200, 216, 252, 288, 344, 360, 392 and smaller.

buyers, whereas, purchasers buying five sizes or less bought a similar amount (25.1 percent) but equaled 64.6 percent of the total number of buyers. Both tabulations (tables 26 and 27) show that the greater proportion of auction buyers purchase a very limited number of sizes, thus emphasizing the fact that auctions fill specialized buying requirements.

This tendency of auction buyers to purchase limited numbers of sizes of a single commodity is even more pronounced in the case of Northwestern boxed apples of the Winesap variety, as shown in table 28. Of the 303 auction buyers in eight markets, 50.5 percent bought one size only during the week of March 11-16, 1935. Over two-thirds (68.7 percent) of the total number of boxes bought at auction during the week were purchased by buyers who desired only 1, 2, or 3 sizes.

The data presented in tables 20 to 28 inclusive disclose for limited time periods some of the important characteristics of auction buyers relative to quantities and number of sizes of some of the more important auction commodities purchased by these buyers. The comprehensiveness of the sample lends weight to its significance as an indi-

TABLE 28.—AUCTION BUYERS ON 8 MARKETS GROUPED ACCORDING TO NUMBER OF SIZES OF NORTHWESTERN BOXED WINEAP APPLES PURCHASED DURING WEEK OF MAR. 11-16, 1935<sup>1</sup>

Number of sizes bought by each purchaser during week <sup>2</sup>	Buyers purchasing			Quantity purchased			
	Number	Percentage of total	Cumulative percentage	Boxes	Percentage of total	Cumulative percentage	Average number of boxes per buyer
1.....	153	50.5	50.5	6,160	27.5	27.5	40
2.....	82	27.1	77.6	6,011	26.9	54.4	73
3.....	31	10.2	87.8	3,214	14.3	68.7	104
4.....	13	4.3	92.1	2,145	9.6	78.3	165
5.....	8	2.6	94.7	1,383	6.2	84.5	173
6.....	9	3.0	97.7	1,840	8.2	92.7	204
7.....	3	1.0	98.7	549	2.5	95.2	183
8.....	1	.3	99.0	257	1.1	96.3	257
9.....	3	1.0	100.0	823	3.7	100.0	274
Total.....	303	100.0	-----	22,382	100.0	-----	74

<sup>1</sup> Data for auction companies at Baltimore, Boston (1 company only), Chicago, Cleveland, Detroit, Philadelphia, Pittsburgh, and St. Louis.

<sup>2</sup> Size groups were as follows: 64, 72, 80, 88, 100, 112, 125, 138, 150, 163, 175, 180, 195, 210, 224, 252.

cator of the quantities purchased by auction buyers. The tabulations bring out the fact that the dominant portion of auction buyers consists of distinctly less-than-carload purchasers. The number of sizes purchased by these buyers also emphasizes the point that, for the most part, buyers are restricted as to the number of sizes which they need to meet the requirements of the trade to which they cater. From the standpoint of the shipper, private or cooperative, it is apparent that the auction outlet enables him to reach a group of buyers which could not be served directly as long as sales were made on a carlot basis. Furthermore, the auction mechanism permits each purchaser to buy the size or sizes in which he is interested and in the quantities meeting his particular sales requirements.

### Frequency of Purchase

Additional factors of interest with respect to auction buyers are those relating to frequency of purchase and to continuity of purchase over a period of time. In table 29 is presented an analysis of the extent to which purchasers of California oranges and lemons were active buyers during four sample weeks of 1934 and 1935. Records of 945 California orange and 772 California lemon purchasers in eight



TABLE 29.—DISTRIBUTION OF CALIFORNIA ORANGE AND LEMON BUYERS ACCORDING TO NUMBER OF WEEKS IN WHICH PURCHASES WERE MADE SEPT. 10-15 AND DEC. 10-15, 1934, AND MAR. 11-16 AND JUNE 10-15, 1935 <sup>1</sup>

Weeks and months in which purchases were made	Buyers of California oranges		Buyers of California lemons	
	Number	Percentage of total	Number	Percentage of total
4 weeks:				
September, December, March, June.....	430	45.5	195	25.3
Total.....	430	45.5	195	25.3
3 weeks:				
September, December, March.....	27	2.8	28	3.6
December, March, June.....	46	4.9	50	6.5
September, December, June.....	46	4.9	39	5.1
September, March, June.....	69	7.3	28	3.6
Total.....	188	19.9	145	18.8
2 weeks:				
September, December.....	32	3.4	13	1.7
December, March.....	25	2.6	23	3.0
March, June.....	38	4.0	53	6.8
September, March.....	13	1.4	13	1.7
September, June.....	34	3.6	32	4.1
December, June.....	9	1.0	33	4.3
Total.....	151	16.0	167	21.6
1 week:				
September.....	69	7.3	45	5.8
December.....	23	2.4	35	4.6
March.....	33	3.5	69	8.9
June.....	51	5.4	116	15.0
Total.....	176	18.6	265	34.3
Total, all groups.....	945	100.0	772	100.0

<sup>1</sup> The following auction companies are included in this tabulation: Baltimore, Chicago, Cincinnati, Cleveland, Detroit, Philadelphia, Pittsburgh, and St. Louis.

Source: Data compiled from auction company records.

auction markets are included. For California oranges, 45.5 percent of the buyers were active in each of the 4 weeks, 19.9 percent in some combination of 3 weeks, 16.0 in 2 weeks, and 18.6 in some one week. The number of California orange buyers active in each of the 4 weeks were: September, 720; December, 638; March, 654; and June, 750. These figures show that the number of active buyers of this commodity did not vary substantially throughout the 4 representative weeks, the number in the lowest week being slightly over 85 percent of the number in the highest week.

Somewhat different results were indicated for lemons, which is to be expected because of seasonal variations in the character of the lemon market. California lemon purchasers active in each of the 4 weeks totaled as follows: September, 393; December, 416; March,

TABLE 30.—DISTRIBUTION OF FLORIDA CITRUS BUYERS ON THE 2 NEW YORK AUCTIONS ACCORDING TO NUMBER OF WEEKS IN WHICH PURCHASES WERE MADE DEC. 10-15, 1934, AND MAR. 11-16 AND JUNE 10-15, 1935 <sup>1</sup>

Weeks in which purchases were made	Buyers of Florida citrus fruit	
	Auction A	Auction B
	Percentage of total number of buyers	Percentage of total number of buyers
<b>3 weeks:</b>		
December, March, June.....	52.1	48.9
<b>Total.....</b>	<b>52.1</b>	<b>48.9</b>
<b>2 weeks:</b>		
December, March.....	13.2	15.7
December, June.....	5.0	4.0
March, June.....	7.7	3.7
<b>Total.....</b>	<b>25.9</b>	<b>23.4</b>
<b>1 week:</b>		
December.....	10.2	12.9
March.....	6.0	8.9
June.....	5.8	5.9
<b>Total.....</b>	<b>22.0</b>	<b>27.7</b>
<b>Total, all groups.....</b>	<b>100.0</b>	<b>100.0</b>

<sup>1</sup> Duplications arising through individual buyers making purchases from both auction companies have not been eliminated.

Source: Data compiled from auction company records.

459; and June, 546. The number of purchasers in the lowest month was about 72 percent of the number in the highest month.

In table 30 is shown a similar distribution for Florida citrus fruit sold by the two auction companies in New York. This tabulation, however, is based on combined purchases of Florida citrus fruit during 3 weeks rather than the 4-week period used for California citrus. From this table it is evident that on the average about 50 percent of the buyers on each auction bought in all 3 weeks; around 24 percent bought 2 weeks; and about 26 percent during only some one of the 3 weeks.

An interesting phase of the analysis is concerned with the degree to which buyers purchase daily or at other frequent intervals. For the purpose of this study, records of buyers who purchased in all 4 sample weeks were used. For example, in table 31 is shown a distribution for six markets of California orange and lemon buyers who purchased these commodities during each of the 4 sample weeks. This distribu-

TABLE 31.—DISTRIBUTION OF CALIFORNIA ORANGE AND LEMON BUYERS ACCORDING TO NUMBER OF DAYS ON WHICH PURCHASES WERE MADE DURING 20 DAILY AUCTION SALES SESSIONS, SEPT. 10-15 AND DEC. 10-15, 1934, AND MAR. 11-16 AND JUNE 10-15, 1935 <sup>1</sup>

Number of days on which purchases were made	California orange buyers purchasing in all 4 weeks			California lemon buyers purchasing in all 4 weeks		
	Number	Percent of total	Cumulative percentage	Number	Percent of total	Cumulative percentage
4.....	6	1.8	1.8	7	5.1	5.1
5.....	18	5.4	7.2	10	7.4	12.5
6.....	22	6.7	13.9	23	16.9	29.4
7.....	23	7.0	20.9	17	12.5	41.9
8.....	25	7.6	28.5	13	9.6	51.5
9.....	17	5.2	33.7	11	8.1	59.6
10.....	24	7.3	41.0	11	8.1	67.7
11.....	21	6.4	47.4	15	11.0	78.7
12.....	22	6.7	54.1	8	5.9	84.6
13.....	17	5.2	59.3	6	4.4	89.0
14.....	18	5.4	64.7	6	4.4	93.4
15.....	21	6.4	71.1	2	1.5	94.9
16.....	19	5.8	76.9	1	.7	95.6
17.....	24	7.3	84.2	3	2.2	97.8
18.....	19	5.8	90.0	3	2.2	100.0
19.....	20	6.1	96.1			
20.....	13	3.9	100.0			
Total.....	329	100.0		136	100.0	

<sup>1</sup> Following auction companies included: Baltimore, Chicago, Detroit, Philadelphia, Pittsburgh, and St. Louis.

Source: Data compiled from records of six auction companies.

tion is made on the basis of the number of days on which purchases were made. During these 4 weeks there were 20 auction sales days so that purchases on 4 days mean that the buyer bought once a week for each of the 4 weeks.

The distribution of California orange buyers is quite uniform. This, however, is not true for the performance of California lemon buyers, as slightly fewer than three-fifths (59.6 percent) of the 136 purchasers bought on 9 days or less (see table 31).

In the case of California citrus purchases on the New York auction market, there is a definite tendency for buyers to make purchases rather frequently. This is shown by the fact that of the total 239 California citrus buyers, 75.4 percent bought on 10 or more of the available 17 days covered by this analysis (see table 32).

From the analysis of buyers in eight auction markets, it is evident that for the sample weeks about 50 percent of the California orange

TABLE 32.—DISTRIBUTION OF 239 BUYERS OF CALIFORNIA CITRUS ON THE NEW YORK AUCTION MARKET ACCORDING TO NUMBER OF DAYS ON WHICH PURCHASES WERE MADE DURING THE 20 DAILY SALES, SEPT. 10-15, AND DEC. 10-15, 1934, AND MAR. 11-16 AND JUNE 10-15, 1935<sup>1</sup>

Number of days on which purchases were made	California citrus buyers purchasing in all 4 weeks		
	Number	Percentage of total	Cumulative percentage
4.....	5	2.1	2.1
5.....	8	3.3	5.4
6.....	12	5.0	10.4
7.....	9	3.8	14.2
8.....	7	2.9	17.1
9.....	18	7.5	24.6
10.....	17	7.1	31.7
11.....	16	6.7	38.4
12.....	24	10.1	48.5
13.....	23	9.6	58.1
14.....	23	9.6	67.7
15.....	15	6.3	74.0
16.....	13	5.4	79.4
17.....	19	8.0	87.4
18.....	9	3.8	91.2
19.....	13	5.4	96.6
20.....	8	3.4	100.0
Total.....	239	100.0	-----

<sup>1</sup> Duplications in buyer count arising from purchases from both auctions by individual buyers have been eliminated.

Source: Data compiled from records of two auction companies.

buyers purchased in all 4 weeks. Lemon buyers active in all 4 weeks totaled only 25.3 percent. In New York about 50 percent of the Florida citrus buyers on the two auctions purchased in 3 sample weeks.

It appears, insofar as this analysis is concerned, that auction customers exhibit a fair degree of regularity in their purchasing activities both from the standpoint of daily purchasing and during the four sample periods on which the study is based. There does, however, appear to be a rather high turnover of customers if determination is based on the extent to which buyers were active in all 4 weeks for which purchasing records were examined. Any conclusions reached along this line must be qualified by recognition of the fact that auction buyers may acquire commodities in various ways which are not always apparent. A buyer may purchase direct and at other times, in his absence, authorize another buyer or buying broker to purchase his requirements. Any such procedure, however, still directs his buying influence through auction channels. The studies indicate a highly significant continuity and frequency of purchase among individual auction buyers.

#### Customers Purchasing from More Than One Auction

Boston and New York each have two terminal auction companies engaged in the sale of fruits and vegetables. It is of interest to note the extent to which customers buying various commodities purchased from both companies in each of these markets. The situation in the two markets for the week of March 11-16, 1935, is shown in table 33. In connection with the data shown in this table, it should be kept in mind that they represent the situation for a single week and only for the commodities included. At other times of the year and with other commodities, the picture may be substantially different. Fifty-nine percent of the New York auction buyers of Florida citrus made purchases in this commodity group from both companies. The remaining 41 percent of the Florida citrus buyers patronized one or the other company but not both companies. The proportions of buyers purchasing other commodities from both New York companies, insofar as auction company records revealed such duplication, were substantially less for Western deciduous fruit, bananas, and tomatoes than in the case of Florida citrus fruit. The respective percentages were: Western deciduous fruit, 10.3; bananas, 22.2; and tomatoes, 18.4.

While the figures for Boston are not entirely comparable with those for New York because of the differences in commodity groupings, they are of some value. Purchasers buying Florida citrus fruit from both Boston auctions approximated 35 percent compared with a similar figure of 59 percent in New York.

TABLE 33.—BUYERS IN NEW YORK AND BOSTON GROUPED ACCORDING TO PURCHASES OF INDIVIDUAL COMMODITIES OR COMMODITY GROUPS FROM EITHER OR BOTH OF THE 2 AUCTION COMPANIES OPERATING IN EACH OF THE 2 MARKETS, MAR. 11-16, 1935<sup>1</sup>

Market and commodity or commodity group	Total number buyers	Buyers purchasing from—			
		Both companies		One company only <sup>2</sup>	
		Number	Percent of total	Number	Percent of total
<b>New York:</b>					
Florida citrus fruit.....	337	199	59.1	138	40.9
Western deciduous fruit....	319	33	10.3	286	89.7
Bananas.....	239	53	22.2	186	77.8
Tomatoes.....	207	38	18.4	169	81.6
<b>Boston:</b>					
Florida oranges.....	147	55	37.4	92	62.6
Florida grapefruit.....	130	42	32.3	88	67.7
Northwestern apples.....	86	12	14.0	74	86.0

<sup>1</sup> Tabulation is based on number of buyers purchasing each commodity or commodity group. Duplications in count arising because of buyers purchasing more than 1 commodity or commodity group have not been eliminated. In each market commodity groups having limited numbers of buyers have not been included. In both New York and Boston almost all of the auction sales of California citrus fruit were made through one of the 2 auction companies operating in each of these markets.

<sup>2</sup> Buyers under this heading were patrons of either 1 but not both of the 2 companies operating in each of the 2 auction markets.

Source: Data compiled from records of 2 auction companies in New York and 2 companies in Boston.

It is apparent, insofar as the data for a single week reveal the situation, that when a commodity is handled in quantity by two auction companies located on the same market, substantial numbers of buyers make purchases from both auctions. At Boston such buyers purchased 70 and 66.7 percent of the total Florida orange business transacted by the two companies during the week of March 11-16, 1935. Similar percentages for Florida grapefruit were 58.3 and 82.2, respectively. As these buyers from both auctions constituted 37.4 and 32.3 percent of the total purchasers of Florida oranges and grapefruit, it is apparent that they comprised the larger and more important buyer group. Somewhat similar figures for New York indicate that Florida citrus customers buying from both auctions comprised 59.1 percent of the total buyers of the commodity. Their purchases amounted to 70.9 and 82.5 percent of the total business done by the respective auctions in this commodity field during the week of March 11-16, 1935. Purchasers buying Western deciduous fruit from both New York auctions during the week of September 10-15, 1934, a more representative month for this commodity group, accounted for 65.1 and 79.1 percent of the business of the two respective companies.

Similar figures for the week of March 11-16, 1935, were 18.5 and 62 percent.

From the seller's point of view, the fact that auction buyers are patrons of more than one auction at locations where two companies operate has significance. It implies that sales contacts with important members of the buying trade may be had through either auction. The existence of two companies would seem to require terms of sale and a schedule of selling of certain commodities which would be fair to both buyers and sellers. The number of sales of a specific commodity and the times at which they are held should be regulated so as to permit adequate buyer representation. The large volumes of various commodities moving through the larger auction centers present many problems, including the speedy handling of sales in order that buyer interest and time may be conserved. No hard and fast rules can be laid down. Problems relating to each commodity in each market must be considered and solved by those most directly interested and worked out on a basis which is fair to all of the various groups, i. e., sellers, buyers, receivers, and the auction companies.

### Relative Importance of Receivers

Relative importance of the receivers on each of the several auctions varies substantially. An analysis of the percentage of the total business for 1934 contributed to certain auctions by receivers handling different proportions of the total business is presented in table 34.

It is evident that on an auction where approximately 200 receivers represent shippers and others who desire their commodities sold through the one auction, the average percentage of total business per receiver is one-half of 1 percent. With 50 receivers to an auction company, the average percentage of total business is 2 percent of the total. Consequently, comparisons of percentages based on the dollar volume of each auction are not indicative of variations in actual volumes handled by the different receivers. The distribution of each company's business received from its particular group of receivers was used, since it appeared to be the more satisfactory after weighing its limitations against other alternative methods of presentation.

The significant point is brought out in this table that in 10 of the 11 auction companies, including Cleveland data which appear in a footnote to table 34, one receiver at each auction contributed from 43 to 64 percent of the total business. Obviously with a substantial percentage of the total business arising from one source, the proportionate volume of the remaining receivers must be small. Consequently, the numerically largest group of receivers is usually the one ranging from 0.1 to 5.0 percent for each receiver.

TABLE 34.—RECEIVERS GROUPED ACCORDING TO PERCENTAGE OF TOTAL BUSINESS, EXCLUSIVE OF BANANAS, IN SPECIFIED AUCTIONS TOGETHER WITH PERCENTAGE OF TOTAL DOLLAR VOLUME CONTRIBUTED BY EACH GROUP, 1934<sup>1</sup>

[Number of receivers]

Percentage of total volume contributed by each receiver	Baltimore	Boston		Chicago	Cleveland	Detroit	New York (1 company)	Philadelphia	Pittsburgh	St. Louis
		Company 1	Company 2							
Over 50 percent.....	1	1				1			1	1
45.1-50.0.....				1	1		1	1		
40.1-45.0.....										
35.1-40.0.....										
30.1-35.0.....										
25.1-30.0.....										
20.1-25.0.....										
15.1-20.0.....										
10.1-15.0.....	2		2		1					
5.1-10.0.....	1	2	4	1	3	2	1	3	3	1
0.1-5.0.....	8	21	43	51	19	21	65	30	24	25
Less than 0.1.....	2	28	20	25	13		125	23	7	11
Total.....	14	47	69	85	37	24	192	63	35	39
Percent of total dollar volume contributed by each receiver group										
Over 50 percent.....	64.48	59.92		48.91	46.03	61.27	45.25	45.88	63.71	60.63
45.1-50.0.....										
40.1-45.0.....										
35.1-40.0.....										
30.1-35.0.....										
25.1-30.0.....										
20.1-25.0.....										
15.1-20.0.....										
10.1-15.0.....	20.70		21.11		14.03					
5.1-10.0.....	8.12	13.97	26.28	5.13	19.72	12.07	8.54	19.48	21.54	5.24
0.1-5.0.....	6.64	25.37	51.28	44.95	19.80	25.65	43.73	24.09	24.49	23.74
Less than 0.1.....	.06	.74	1.35	1.90	.42		2.25	.56	.25	.20
Total.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source of data: Compiled from records of cooperating auction companies.

<sup>1</sup> In determining the proportion of total business contributed by the various receivers, banana business has been excluded. In addition, minor amounts of business contributed by undesignated receivers, classified in the records as "Miscellaneous," "Salvage, etc.," were omitted. These latter eliminations were not significant, ranging between 0.01 percent and 0.35 percent for the 5 companies where such commissions were necessary. Salaried representatives of agricultural producers' cooperative associations have been included as receivers in this tabulation. As the California Fruit Growers Exchange (citrus fruit) and the California Fruit Exchange (deciduous fruit) are both represented on the auction markets by salaried representatives of the California Fruit Growers Exchange, figures relating to the two cooperatives have been combined for the purposes of this tabulation.

Data for auction receivers at Cleveland were obtained on a carload basis only, and, therefore, are not shown in this tabulation. Of the 21 receivers, the two largest handled 43.4 and 15.9 percent, respectively, of the total volume sold through the auction in 1934. Two others each sold between 10.1 and 15.0 percent, or a combined total of 22.7 percent. The remaining 17 receivers each sold 5 percent or less, combined sales of this group totaling 18 percent.



The single receiver contributing a large proportion of the business of all but one of the auction companies is the sales organization of California citrus growers, the California Fruit Growers Exchange. Through a joint sales arrangement (3) the Exchange handles the deciduous fruit marketed by the California Fruit Exchange. The percentages shown are for the combined business of the two cooperative associations.

Any comparisons between tables 34 and 7 should be made with due regard to essential differences in the data presented in each table. Percentages based on value will vary from those using carlots as a base because of differences in carlot values of the several commodities. There is also a difference in the number of auction companies included in the two tables. Both tables, however, emphasize the extent to which cooperative associations are supporters of the auction method of selling and make clear the reason for their interest in the efficient operation of this particular distribution channel.

### Auction-Company Ownership

There are two generally prevailing opinions regarding the controlling interest of auction companies. One of these opinions is that auctions should be entirely independent of trade control. Those who hold this view believe that independent control is productive of an impartial and efficient operation fair to both seller and buyer. The other opinion holds that trade ownership and control are productive of a more substantial support of the auction method of selling because members of the trade are financially interested in the successful operation of the auction.

Under the trade control form of ownership, numerous variations are possible. Ownership may be essentially buyer in character. It may include only a limited number of buyers or it may be fully representative of the buying group. Receivers usually are also holders of stock, although in those instances in which individual trade units function as both receivers and buyers, it is difficult to determine which particular function is primarily responsible for their being stockholders. With limited exceptions, shipping interests are not numerically strong as holders of stock in auction companies. Among the exceptions, however, is one producing and shipping group which has important interests in several of the more important auction companies.

Cooperative marketing associations have not become owners of stock in auction companies, although individuals connected with some organizations believe that auction stock should be held by cooperatives. Some also believe that ownership should be restricted to cooperative shipping associations. Proving or disproving the validity of this position is difficult as conjecture and opinion enter largely into

consideration of the problem. A number of highly significant considerations will immediately become apparent to one giving thought to the matter. The management of jointly controlled enterprises in terminal markets involves important problems of cooperative business administration. The all-important question of extension and supervision of credit to auction buyers is fundamental. The extent of support of a cooperatively owned auction by private or nonstockholding shippers is of first significance. These and similar considerations must be weighed against potential advantages to be gained through ownership by cooperative associations.

In examining the extent and nature of auction-company control, it should be kept in mind that receivers are in a strategic position for requesting correction of any unfavorable auction practices. The success of the auction operation depends in large degree upon the character of accounts which a company has with receiver representatives of shippers, and the support given to the company by receivers and their principals (6).

The trade-owned auction companies are substantially greater in number than those owned by interests outside the trade. The trend of auction company ownership is toward trade control. In 1931, ownership and control of 5 auction companies were reported as being outside of the trade and 13 were trade controlled (6). Currently, the number of auction companies which can be definitely classed as being controlled by interests independent of the trade is less than in 1931.

Ownership set-ups of auction companies present a high degree of diversity. This situation will be most readily understood from a brief summary statement covering 12 auction companies in 10 important auction centers. The information contained in this statement is based on the ownership situation as it existed in 1934 and 1935.

*The United Fruit Auction Co., Cincinnati, Ohio.*—Over 50 percent of stock was held by various interests closely identified with shipping operations in producing areas. Twenty-six percent of sales in 1934 were made for stockholders.

*Philadelphia Terminals Auction Co., Philadelphia, Pa.*—Stock ownership was divided as follows: Trade 43 percent, employees 20 percent, and outsiders 37 percent. Trade stock was estimated to be about equally divided between auction receivers and buyers, accurate division being impossible because of the dual interests of some firms. One-third of the trade-owned stock was estimated to be held by persons interested solely in the vegetable business who have no dealings with the auction company. Stock held by outsiders was almost entirely held by heirs of former members of the trade.

*Baltimore Fruit Exchange, Baltimore, Md.*—Stock was understood to be wholly owned by a large private corporation having both producing and marketing interests.

*The American Central Fruit Auction Co., St. Louis, Mo.*—About 90 percent of the stock was owned by buyers, relatives, and employees of buyers; 6 percent by auction company employees or their heirs; and 4 percent by former buyers, or their estates.

*New York Fruit Auction Corporation, New York, N. Y.*—Shipping and producing interests owned about 52 percent of the stock, 40 percent was held by buyers (37.5%) and receivers (2.2%), auction company employees 3 percent, and 5 percent represented holdings of outsiders, including truckmen and other nonauction buyers, as well as treasury stock.

*Union Fruit Auction Co., Pittsburgh, Pa.*—One-third of the stock was held by a single large corporation representing producing and shipping interests. The remaining two-thirds was owned by various fruit-trade interests in the market. A limited number of five receivers and jobbers and auction employees appeared to own the dominant portion of the latter two-thirds of the stock.

*Fruit Auction Sales Co., Chicago, Ill.*—This company's stock was divided among various classes of holders about as follows: Buyers, their relatives or employees, 51 percent; shipper interests, 22 percent; receivers, 18 percent; present or former auction employees, 7 percent; former buyers, relatives, or heirs, 1 percent; and nontrade, 1 percent.

*H. Harris and Co., Boston, Mass.*—Four partners, claiming no financial interest in any other line of the fruit and vegetable business.

*Independent Fruit Auction Co., Boston, Mass.*—This auction company was owned by a single member of the terminal distributing trade.

*Consolidated Fruit Exchange, Cleveland, Ohio.*—Fifty-nine percent of the stock was owned by buyers and receivers, 30 percent by auction officials, and 11 percent by out-of-town nontrade interests.

*Brown and Seccomb Fruit Auction Co., Inc., New York, N. Y.*—Stock was owned in equal amounts by a holding company representing two corporations which prior to 1930 were actively engaged in the business of selling fruits at auction. Through this arrangement, about 25 percent of the stock of the holding company was owned by present or former auction employees, and 75 percent by interests independent of the trade.

*Detroit Fruit Auction Co., Detroit, Mich.*—About 93 percent of the stock was held by employees and other persons not engaged in the produce trade. The remaining 7 percent was held by auction buyers. Receivers owned no stock.

Sellers and buyers are interested in impartial operation of auction companies. During the course of this survey, the principal complaints against operating practices were found, for the most part, among the trade in some, of the smaller markets. These complaints were primarily concerned with claims of favoritism in selling to large stockholders or with the sale of commodities for stockholders. There

seemed to be no adequate way of determining the validity of these objections without extended study of sales and other practices at the actual time of sale. Auction company records themselves were not satisfactory for the purpose of determining whether the objections were justified. The fact that these opinions exist should be sufficient to result in the taking of the steps necessary to correct the situation, such as a wider distribution of ownership in trade-controlled auctions or some form of public regulation of the smaller auctions.

In considering any suggestion relating to a wider dispersion of auction ownership among the trade, in either large or small auction centers, it is questionable whether this extension of ownership would need to go as far as to include the larger cooperative groups. Because of their large volumes of business, they are in position to present effectively any suggestions which they believe will improve the operation of any auction company with which they do business. These larger associations are also, for the most part, represented by salaried representatives who are in position to observe closely daily transactions on the auction. It is also doubtful whether stock ownership would be particularly helpful to the smaller cooperative shippers, who could not be represented by salaried representatives. There are practical difficulties confronting the extension of ownership in some of the markets, but insofar as such extension is possible, it undoubtedly would prove desirable.

The quasi-public nature of auction selling has resulted at various times in the making of suggestions that auctions should be subjected to some form of municipal or other governmental regulation (11) (7). Recently, the press has carried statements of the Federal Trade Commission based on an investigation of auction selling and bearing directly upon the question of auction company control and regulation (8). Because of the scope of the conclusions of the Commission, they are presented in detail as follows:

The Commission believes that terminal market auctions properly organized and conducted are a practical and efficient method by which fresh fruits may be sold. This conclusion is based upon the following considerations: The large auction companies appear to have demonstrated that this method of sales disposes of large quantities of fruits quickly and with competitive forces given more effect than is generally possible at private sale. The auctions also furnish an accurate and complete record of sales to shippers. They also tend to eliminate duplication in distributing fruits. Auctions appear to adjust prices more effectively to supply and demand conditions and to equalize them as among different sales transactions. This appears advantageous to growers and also to buyers, the latter being able to buy with greater assurance.

Furthermore, the Commission believes that most of the objections to the auction method of selling fruits can be overcome by impartial administration of properly organized and controlled auction companies. It is desired to emphasize that unless the ownership of auction companies organized by active members of the trade is sufficiently dispersed among sellers, or their representatives, as well

as buyers, the possibilities for control of such auctions to the detriment of its patrons are great. For that reason, the auction method of selling may very well be regarded as unsound for the smaller terminal markets, unless supervised by some responsible public authority. It is suggested that States and municipalities might well consider the advisability of requiring the periodical publication of the ownership of fruit auction companies and of using the licensing power to prevent abuses resulting from the lack of impartial administration of auction companies (8).

### Units of Sale

Considerable variation in the number of packages constituting the minimum unit of sale from any one line was noted for the several auction companies and for the different commodities. For citrus fruit, the usual minimum was 20 packages out of one line, although one market had a requirement of 25 packages, while another dropped to 10. Exceptions were noted when individual lines of citrus numbered 30 or 35 packages. In these cases the total number was sold without splitting of the line. Where the number of packages in a single line was less than the specified minimum, the minimum did not apply. This held as a general rule for all commodities.

For products other than citrus, a rather wide variation was found, ranging usually from 10 to 50 packages. The variability among the various commodities may be illustrated by examining the units of sale in effect at New York at the time of this survey. Twenty packages comprised the minimum number from any single line for apples, citrus fruit, pears, pineapples, and tomatoes, except that lots of less than 30 packages were not split. Forty packages were the unit for all other deciduous fruit, except apples, pears, prunes, and juice grapes, although lots of less than 50 packages were not split. Juice grapes, if unloaded on the piers, and prunes were sold in units of 100 packages. Juice grapes, if sold in New Jersey yards, and watermelons were sold in carlots.

Determining the proper unit of sale at auction involves some rather important considerations. The minimum quantities must be of sufficient size to attract an adequate number of buyers without opening the way to extensive purchase by those buyers who normally should buy from the jobbing portion of the trade. In other words, the unit of sale determines largely the particular point in the distributing ladder at which auction selling takes place. This level has been set primarily at the jobbing position. Any reduction in the unit of sale permits customers of jobbers to become purchasers at auction, thus diverting buying which would ordinarily go through the jobbers' places of business. There is, of course, some purchasing at auction by such retail and other nonjobber elements of the trade as (see table 17) are in position to use auction products in substantial quantities.

There have been serious protests and action directed toward retailer

purchasing at auction. Without approving the character of these actions, there appears to be adequate justification for setting the minimum units of sale at a level which confines the principal purchasing to a single element of the trade. Such an element thinks in the same terms regarding price, because its resale outlets are more or less similar.

### Auction Selling and Handling Charges

Charges arising from selling at auction include auction commissions and may also include other items variously designated as terminal, wharfage, unloading, sorting, or package charges. In addition to these charges collected by auction companies, there are expenses paid by the seller for the maintenance of a salaried representative or the employment of a representative on a per-car or commission basis.

Auction companies derive their principal revenue from commissions paid by sellers and in some instances from terminal charges paid by sellers or buyers.

The customary range of auction commissions at the time of this survey was from 1½ to 2 percent of the selling price. In some instances, a minimum selling charge per car was made.

Terminal charges incident to auction showed substantial differences in amount and method of assessment. Generally, these charges were made against the buyers. In two markets, however, the charges were paid by the seller or his receiver and in one market no terminal or wharfage charges were assessed. Terminal charges paid by buyers, with minor exceptions, ranged between 2 and 5 cents per package, with 2 to 3 cents being the more representative range. In some cases, 5 cents per package was deducted from the buyers with a subsequent refund of 2 cents, leaving a net charge of 3 cents. A limited number of higher terminal charges on imported products were in effect in some auctions, such as 7 to 10 cents per package on pineapples and 10 cents per package on coconuts.

## Attitude of the Buying Trade Toward the Auction Method of Sale

**I**N A STUDY of the auction method of selling fruits and vegetables, it is helpful to know what representative members of the terminal-market trade think about this particular sales procedure. Accordingly, during the progress of the study a limited number of trade members were interviewed. These interviews included 77 members of the trade whose business was primarily of a jobbing character and 23 chain-store representatives. The jobbing group was distributed in eight auction markets, Baltimore, Boston, Chicago, Detroit, New York, Philadelphia, Pittsburgh, and St. Louis. The chain-store representatives were located in all of the foregoing group of markets, with the exception of Detroit.

The interviews were restricted not only in number, but also to representative members of the trade as determined from the relative amounts of their purchases at auction. The principal purpose of the interviews was that of obtaining information directing attention to trade criticisms which might be indicative of any weaknesses in the auction method of selling or in the operation and conduct of any individual auction insofar as the trade point of view was concerned.

The number of jobbers and chain-store representatives included is shown for each market in table 35. In this table are also shown the percentages of auction sales of representative commodities made to the buyers interviewed during the 1 week of March 11-16, 1935. It will be observed that in all markets, with the exception of New York, a substantial portion of the weekly auction business of each market was represented by the buyers interviewed.

From a numerical standpoint, the jobbing-trade members who were interviewed made up the following approximate percentages of the specified groups of jobbers purchasing at auction in each market during the week of March 11-16, 1935: Baltimore, 32 percent; Boston, 5 percent of local jobbers; Chicago, 19 percent of all jobbers; Detroit, 13 percent of all jobbers; New York, 2 percent of local jobbers; Philadelphia, 10 percent; Pittsburgh, 8 percent; St. Louis, 14 percent.<sup>7</sup> For chain-stores, the coverage was higher, the corresponding percentages being as follows: Baltimore, 100 percent of chain-stores buying during the week of March 11-16, 1935; Boston, 33 percent; Chicago, 100

<sup>7</sup> Percentages for jobber groups are close approximations. In New York, St. Louis, and Boston, a small proportion of purchasing was on a cash basis. In such instances, no attempt was made to determine the number of purchasers included in the cash group. Cash sales during the week of Mar. 11-16, 1935, amounted to the following when expressed as percentages of total sales for each market: Baltimore, 1.54; Boston, 1.47; Chicago, 0.64; New York, 4.46; Philadelphia, 0.08; Detroit and Pittsburgh, 0.

TABLE 35.—JOBBERS AND CHAIN-STORE REPRESENTATIVES CLASSIFIED ACCORDING TO PROPORTION OF AUCTION BUSINESS PURCHASED BY EACH GROUP, MAR. 11-16, 1935

Market and class of buyer	Number of buyers interviewed	Percent of total auction sales in specified market made to indicated buyer group <sup>1</sup>					
		California		Florida		North-western apples	Total all commodities
		Oranges	Lemons	Oranges	Grapefruit		
<b>Baltimore:</b>							
Jobbers.....	15	34.96	14.68	23.50	29.75	21.86	26.49
Chains.....	6	13.74	13.19	7.01	.....	6.11	9.82
<b>Total.....</b>	<b>21</b>	<b>48.70</b>	<b>27.87</b>	<b>30.51</b>	<b>29.75</b>	<b>27.97</b>	<b>35.81</b>
<b>Boston:</b>							
Jobbers <sup>2</sup> .....	5	5.89	11.71	10.43	8.79	2.07	7.35
Chains <sup>2</sup> .....	4	23.83	10.79	13.15	22.93	13.22	18.07
<b>Total.....</b>	<b>9</b>	<b>29.72</b>	<b>22.50</b>	<b>23.58</b>	<b>31.72</b>	<b>15.29</b>	<b>25.42</b>
<b>Chicago:</b>							
Jobbers.....	15	29.56	41.68	22.38	28.45	16.90	26.18
Chains.....	2	3.49	4.68	.....	.....	1.82	2.29
<b>Total.....</b>	<b>17</b>	<b>33.05</b>	<b>46.36</b>	<b>22.38</b>	<b>28.45</b>	<b>18.72</b>	<b>28.42</b>
<b>Detroit:</b>							
Jobbers.....	7	11.16	12.05	12.54	19.53	12.34	11.59
Chains.....	( <sup>3</sup> )	.....	.....	.....	.....	.....	.....
<b>Total.....</b>	<b>7</b>	<b>11.16</b>	<b>12.05</b>	<b>12.54</b>	<b>19.53</b>	<b>12.34</b>	<b>11.59</b>
<b>Philadelphia:</b>							
Jobbers.....	11	18.69	32.24	23.25	18.34	20.84	21.81
Chains.....	3	29.86	15.48	8.07	29.29	11.13	16.78
<b>Total.....</b>	<b>14</b>	<b>48.55</b>	<b>47.72</b>	<b>31.32</b>	<b>47.63</b>	<b>31.97</b>	<b>38.59</b>
<b>Pittsburgh:</b>							
Jobbers <sup>2</sup> .....	6	28.49	27.65	24.97	37.27	25.17	29.03
Chains.....	4	6.24	14.98	10.33	6.47	3.53	7.99
<b>Total.....</b>	<b>10</b>	<b>34.73</b>	<b>42.63</b>	<b>35.30</b>	<b>43.74</b>	<b>28.70</b>	<b>37.02</b>
<b>St. Louis:</b>							
Jobbers.....	7	10.01	6.06	6.25	8.39	5.59	8.36
Chains.....	1	14.31	.....	9.62	4.38	5.84	11.47
<b>Total.....</b>	<b>8</b>	<b>24.32</b>	<b>6.06</b>	<b>15.87</b>	<b>12.77</b>	<b>11.43</b>	<b>19.83</b>

<sup>1</sup> Jobber classification includes all buyers doing significant amounts of jobbing business.

<sup>2</sup> Percentages shown are for following number of members of trade: Boston, jobbers 4, chains 3; Pittsburgh, jobbers 6.

<sup>3</sup> No interviews with chain-store representatives.



TABLE 35.—JOBBER AND CHAIN-STORE REPRESENTATIVES CLASSIFIED ACCORDING TO PROPORTION OF AUCTION BUSINESS PURCHASED BY EACH GROUP, MAR. 11-16, 1935—Continued

Market and class of buyer	Number of buyers interviewed	Percent of total auction sales in specified market made to indicated buyer group			
		California citrus	Florida citrus	Western deciduous	Total all commodities
New York:					
Jobbers.....	11	7.94	6.73	4.66	6.23
Chains.....	3	5.65	2.46	2.00	2.95
Total.....	14	13.59	9.19	6.66	9.18

percent; New York, 20 percent; Philadelphia, 37 percent; Pittsburgh, 40 percent; and St. Louis, 100 percent.

On the basis of results presented in table 36, 52 percent of the group of 77 designated as jobbers evidenced definitely favorable attitudes toward buying at auction. An additional 36 percent revealed attitudes which fall into a neutral classification. The remainder, or 12 percent, showed an attitude unfavorable to auction selling.

Attitudes of chain-store buyers showed an entirely different distribution from that indicated by the jobber group. Sixty-one percent of the 23 chain-store representatives disclosed attitudes unfavorable to the auction method of purchasing, as indicated by table 37. Thirty-five percent of the chain buyers revealed a favorable attitude.

The results of these two tabulations clearly reflect the differences in buying policies and requirements exhibited by some of the important chain-store groups in comparison with those of the jobber group. These primary differences in attitudes toward auction buying as shown by the dominant portions of the jobbing and chain groups interviewed probably are to a large extent irreconcilable under existing methods of operation. The fact that some of the chains have found it possible to use the auction definitely shows that auctions can be used successfully by chain-stores as effective and satisfactory sources of supply. Other chain-store systems which have developed carlot buying and handling methods will undoubtedly continue to follow this method of procedure so long as they see advantages from the standpoints of more advantageous prices, savings in handling costs or preventing competitors from learning what prices were paid.

In compiling a summary of opinions regarding the advantages of the auction method of selling, it is desirable to examine all of the advantages cited, together with a count of the number of times each is mentioned. In conducting the interviews, each trade member was

TABLE 36.—ATTITUDES OF JOBBERS TOWARD BUYING AT AUCTION<sup>1</sup>

Statement of attitude	Number of jobbers	Percent- age of total
<b>Favorable attitudes:</b>		
Prefer auction buying because—		
All purchase prices known.....	11	14
Size and quality inspections made readily.....	11	14
Prices are lower.....	7	9
Good method of distribution to small buyers.....	4	5
Best method of distribution.....	2	3
Stockholder earnings received.....	2	3
Convenient method (reason not stated).....	1	1
Price risk avoided.....	1	1
Can determine "demand".....	1	1
Immediate sale must be made.....	1	1
<b>Total favorable attitudes.....</b>	<b>41</b>	<b>52</b>
<b>Neutral attitudes:</b>		
Auction only available trade source for certain commodities.....	20	26
Minor dissatisfaction (reason not stated).....	5	7
Use of private sale and auction dependent upon market trends.....	2	3
<b>Total neutral attitudes.....</b>	<b>27</b>	<b>36</b>
<b>Unfavorable attitudes:</b>		
Prefer private sale because—		
Speculative profits possible through carlot purchasing.....	2	3
Adjustments for poor quality more readily obtained.....	2	3
Auction sales units too small.....	2	3
Prefer carlot purchasing (reason not stated).....	1	1
Fluctuations in auction price too frequent.....	1	1
Rough handling eliminated.....	1	1
<b>Total unfavorable attitudes.....</b>	<b>9</b>	<b>12</b>
<b>Total number jobbers interviewed.....</b>	<b>77</b>	<b>100</b>

<sup>1</sup> Jobber classification includes all trade members interviewed whose business was wholly or in any significant part of a jobbing nature.

TABLE 37.—ATTITUDES OF CHAIN-STORE BUYERS TOWARD PURCHASING AT AUCTION

Statement of attitude	Number of buyers	Percentage of total
Favorable attitudes:		
Prefer auction buying because—		
Required sizes available.....	4	17
Quality products available at prevailing price levels.....	2	9
Purchases made from fair samples.....	2	9
Total favorable attitudes.....	8	35
Neutral attitudes:		
Buy through all trade channels to protect selves.....	1	4
Total neutral attitudes.....	1	4
Unfavorable attitudes:		
Prefer private sale because—		
Carlot purchasing better (reason not stated).....	5	22
Auction supply not dependable for sales purposes and purchase price known to competitors.....	4	17
Savings effected in handling expenses or prices lower.....	3	13
Better quality obtained at private sale.....	2	9
Total unfavorable attitudes.....	14	61
Total number chain-store buyers interviewed.....	23	100

requested to state whatever advantages in auction buying appealed to him as significant. All answers were summarized irrespective of the number of separate advantages mentioned by each trade member. Forty-eight jobbers together mentioned 12 advantages of auction buying a total of 61 times as summarized in table 38. The more important advantages stated by the jobber group related to the wider selection of grades and sizes together with the convenience of inspection at auction (19 percent of replies), and knowledge of prices paid by competitors for their purchases (19 percent of replies). An additional 15 percent of the replies indicated that jobbers were of the opinion that auction prices were more favorable than buying through other jobbers.

Chain-store buyers stating advantages for purchasing at auction indicated that price considerations were of the most importance numerically, as shown in table 39. Forty-three percent of the replies

TABLE 38.—ADVANTAGES OF THE AUCTION METHOD OF SELLING ACCORDING TO JOBBERS<sup>1</sup>

Advantages	Times mentioned	
	Number	Percentage of total
Selection of grades and sizes better at auction; convenience of inspection.....	12	19
Know what other buyers pay.....	12	19
Auction prices more favorable than buying through other jobbers.....	9	15
Rapid distribution and sale.....	8	13
Auction prices guide to market prices.....	7	11
Auction fair to buyer and seller.....	5	8
Avoid market risk by purchasing at auction.....	3	5
Fair sampling.....	1	2
Auction more convenient than private sale.....	1	2
Auction prices same to both large and small buyers.....	1	2
"Can see demand".....	1	2
Buy in small quantities at auction.....	1	2
Total advantages mentioned.....	61	100

<sup>1</sup> Jobber classification includes all trade members interviewed whose business was wholly or in any significant part of a jobbing nature. All advantages stated were included without regard to the number of separate advantages mentioned by each individual trade member interviewed. The number of individuals stating advantages was 48.

stressed considerations in this field. Thirty-five percent of the replies emphasized quality considerations. Replies under the heading of "Price considerations" were well distributed under nine different groups so that no one reply was particularly outstanding. An interesting contrast between jobbers and chain-store buyers was apparent in their attitudes toward general trade knowledge of prices paid. Whereas 19 percent of the total replies of jobbers relating to advantages of the auction, as presented in table 38, revealed a definite interest in knowing what competitors paid, none of the chain-store buyers indicated that they regarded this particular consideration as advantageous to the chains.

The results presented in tables 40 and 41 relate to criticisms of the auction method of selling as mentioned by jobbers and chain-store buyers who were interviewed during the course of this study. In these tabulations replies have been grouped under similar headings. Twenty-six criticisms were mentioned 58 times by 38 jobbers and 14 were named 41 times by 19 chain-store buyers.

There were some rather important differences noted between the jobber and chain-store groups. For example, 33 percent of the criticisms submitted by the jobbing group were directed against the operating methods and policies of the auctions, while only 12 percent of the criticisms of the chain-store buying group were so directed. In the

TABLE 39.—ADVANTAGES OF THE AUCTION METHOD OF SELLING ACCORDING TO CHAIN-STORE BUYING REPRESENTATIVES <sup>1</sup>

Advantages	Times mentioned	
	Number	Percentage of total
<b>Price considerations:</b>		
Prices at auction and private sale equal.....	5	-----
Prices at auction lower than at private sale.....	4	-----
Auction prices set market price.....	4	-----
Auction prices lower on less desired sizes.....	3	-----
Auction prices lower on small lots than at jobbers.....	3	-----
Purchasing at auction advantageous on falling markets.....	3	-----
Uniform prices at auction; "all in at same price".....	2	-----
Market price readily apparent at auction.....	1	-----
Price at auction can be raised by chain buying.....	1	-----
<b>Total.....</b>	<b>26</b>	<b>43</b>
<b>Quality considerations:</b>		
Quality of auction offerings equal to or better than offerings at private sale.....	12	-----
Selection of grades and sizes better at auction.....	9	-----
<b>Total.....</b>	<b>21</b>	<b>35</b>
<b>Buyer's convenience:</b>		
Auction purchasing a supplement to carlot buying.....	4	-----
Readiness of inspection at auction.....	3	-----
Auction more convenient for less-than-carlot purchases.....	3	-----
Purchasing at auction and at private sale equally convenient.....	2	-----
Purchases at auction made more quickly than at private sale.....	1	-----
<b>Total.....</b>	<b>13</b>	<b>22</b>
<b>Total replies.....</b>	<b>60</b>	<b>100</b>

<sup>1</sup> All advantages stated were included without regard to the number of separate advantages mentioned by each individual trade member interviewed. The number of individuals stating advantages was 17.

TABLE 40.—CRITICISMS OF THE AUCTION METHOD OF SELLING MENTIONED BY JOBBERS<sup>1</sup>

Criticisms	Times mentioned	
	Number	Percentage of total
<b>Operating methods and policies:</b>		
Objection to sales in small lots to retailers and other buyers.....	5	
Sampling not always fairly done.....	5	
Favoritism to large purchasers and stockholders.....	3	
Lines of apples and pears too large at auction.....	2	
Credit requirements too strict.....	1	
Objects to withholding or withdrawal of fruit from auction sale.....	1	
Objection to methods of developing new business.....	1	
Buy in smaller lots at private sale.....	1	
<b>Total.....</b>	<b>19</b>	<b>33</b>
<b>Profits and costs:</b>		
Auction restricts jobbers' margins through publicly known prices.....	10	
Private seller makes free delivery at times.....	2	
Buy below market price at private sale.....	1	
<b>Total.....</b>	<b>13</b>	<b>22</b>
<b>Quality considerations:</b>		
Adjustments for poor quality not obtainable at auction.....	4	
Better selection of Florida citrus fruit at private sale.....	2	
Quality of auction offerings affected by exposure to heat in auction shed.....	1	
Quality at auction lower than at private sale because of more handling.....	1	
<b>Total.....</b>	<b>8</b>	<b>14</b>
<b>Prices:</b>		
Carlot prices at private sale lower than auction prices.....	1	
Price fluctuations greater at auction than at private sale.....	1	
Auction makes prices low.....	1	
Auction dominates market.....	1	
Auction prevents speculation because market price known.....	1	
Price boosters active at auction.....	1	
<b>Total.....</b>	<b>6</b>	<b>10</b>

<sup>1</sup> Jobber classification includes all trade members interviewed whose business was wholly or in any significant part of a jobbing nature. Replies from 38 jobbers are summarized.

TABLE 40.—CRITICISMS OF THE AUCTION METHOD OF SELLING MENTIONED BY JOBBERS—Continued

Criticisms	Times mentioned	
	Number	Percentage of total
<b>Quantity considerations:</b>		
Limited number of commodities offered at auction.....	5	
Tend to buy more at auction than needed.....	1	
Total.....	6	10
<b>Buyers' convenience:</b>		
Auction buying takes too much time.....	3	
Auction buying must be done at stated time.....	2	
Total.....	5	9
<b>Ownership:</b>		
Auction ownership should be widely distributed.....	1	
Total.....	1	2
Total replies.....	58	100

case of criticisms under the "Profits and costs" heading, there was no significant difference noted. There was somewhat more difference observed in the case of quality considerations, the jobber percentage being 14 compared with 19 for the chain-store group.

Price considerations showed still greater variation, being 10 percent of the total for the jobbing group compared with 24 percent for the chain-store buyers. Of the 24 percent of the chain group, 20 percent reflected essential differences in buying preferences of the two groups; i. e., (1) private sale purchases enable chain-store operators to surprise competitors because purchase price is not known (15 percent), and (2) auction purchases do not reflect price discount possible when large-scale purchases are made at private sale (5 percent). Considerations relating to buyer convenience accounted for 9 percent of the jobbing replies, compared with only 5 percent for the chain-store group.

TABLE 41.—CRITICISMS OF THE AUCTION METHOD OF SELLING MENTIONED BY CHAIN-STORE BUYING REPRESENTATIVES <sup>1</sup>

Criticisms	Times mentioned	
	Number	Percentage of total
<b>Operating methods and policies:</b>		
Sample fixing at auction.....	3	
Favoritism to large stockholders and friends of auctioneer.....	2	
Total.....	5	12
<b>Profits and costs:</b>		
Higher costs at auction or lower prices at private sale.....	9	
Total.....	9	23
<b>Quantity considerations:</b>		
Auction supply not dependable or ample.....	6	
Oversupply more readily apparent at auction.....	1	
Total.....	7	17
<b>Quality considerations:</b>		
Auction offerings of Florida citrus not as good as at private sale.....	3	
Quality affected adversely by long standing on auction dock or removal of commodities from refrigeration.....	2	
Adjustments for poor quality not obtainable at auction.....	2	
Auction quality lower.....	1	
Total.....	8	19
<b>Prices:</b>		
Prices known at auction; private sale permits surprising competitors.....	6	
Auction prices do not reflect effect of large purchases.....	2	
Price fluctuations at auction greater than at private sale.....	1	
Price boosters at auction.....	1	
Total.....	10	24
<b>Buyer's convenience:</b>		
Auction buying must be done at stated time; private sale purchasing at buyer's convenience.....	2	
Total.....	2	5
Total replies.....	41	100

<sup>1</sup> Replies from 19 chain-store buyers are summarized.



## Large-scale Purchasing at Auction and at Private Sale

THE larger cooperative associations engaged in marketing auction commodities for the most part have used only one method of sale in terminal markets. They have reached a conclusion that this policy is in their best interest. There are, however, some exceptions as cooperative sales managements are by no means in agreement as to whether it is the better procedure to restrict sales operations on a single market to a single method of sale. Data adequate to prove conclusively the validity of either position are lacking.

As chain stores assumed greater importance in the distribution of fruits and vegetables and in some cases developed their own agencies for purchasing in producing areas, numerous problems and questions have arisen regarding the sales policies which cooperative associations should follow. One of the more pressing problems is whether a cooperative association should sell its commodities at private sale to large-scale purchasers located in markets where other buyers are required to obtain their supplies of the same association's commodities through auction channels. In this connection, the term "large-scale purchasers" refers primarily to chain stores, but it also includes other trade members who buy in sufficient quantities to purchase at private sale if given the opportunity by important organizations now using auctions as exclusive sales outlets in certain markets.

There apparently is no solution to this problem which will satisfy all distribution agencies. The most that can be done in this discussion is to point out some of the more important factors which must necessarily enter into consideration by those who are required to make the decisions.

It must be recognized that definite economies in operation are available to the purchaser who is in position to buy in carlots. The more obvious of these savings are to be found in reduction of handling charges in terminal markets. These savings center largely around the handling costs incurred on auction piers and subsequent costs of movement from auction warehouses to the purchaser's warehouse. Not all large purchasers, however, have seen fit to "by-pass" the usual terminal distribution agencies by establishing their own purchasing organizations, as some large-scale purchasers are important supporters of the auction method. In other words, large-scale purchasers of fruits and vegetables are not in agreement as to the method which serves them best. A number of important but rather intangible factors enter into their decisions in addition to the directly discernible

savings accruing from terminal handling costs. Among these may be mentioned (1) cost of maintaining a purchasing organization whose activities extend to the production and shipping areas, (2) difficulties in obtaining adequate supplies of specific sizes desired without being required to purchase, also other sizes which are not wanted, and (3) acquisition of proper storage and railroad track facilities so that all possible savings in terminal handling costs may be effected.

Insofar as the facts have been developed during this survey, it is apparent that some chain-store groups as representatives of large-scale purchasers are served adequately by terminal-auction-selling methods. Others have thought it advantageous to set up their own machinery for the purchasing of fruits and vegetables. It is extremely doubtful that having once set up these facilities, they would choose to return to the older methods used in the terminal markets.

There are a number of other points which should be considered in connection with the problem of making private sales to large-scale purchasers in auction markets. A number of these follow in summary form:

1. The market coverage on citrus fruit through auctions in all auction markets averaged almost 80 percent during the 1934-37 period, when auction sales were expressed as percentages of carlot unloads. The similar figure for deciduous fruit was 47 percent.

2. The percentage of total fruit and vegetable business done through chain stores appears to be substantially less than the corresponding percentage of total food sales transacted by chain groups. In 1935, the proportion of total retail grocery business done by chain stores in the New England States and in the States of New York, Pennsylvania and New Jersey was 46 percent of the 1935 total of all retail food sales in the area. It has been estimated that in eight metropolitan areas located in these States, chain systems were retailing only about 27 percent of the total supply of fruits and vegetables. The individual market areas and the percentages of fruits and vegetables handled by chains were estimated as follows: (4)

<i>Year</i>	<i>Percent</i>
1935:	
New York metropolitan area.....	30
1936:	
Philadelphia.....	21
Boston.....	32
Newark.....	21
Providence.....	28
New Haven.....	9
Hartford.....	21
Springfield.....	23

It is of importance to note that, based on figures of the Bureau of the Census for 1935, the proportion of total retail food sales transacted

by chains in 9 auction markets shows an average of 47 percent. Averages for the individual markets were: Baltimore, 36; Boston, 53; Chicago, 57; Cleveland, 60; Detroit, 59; New York, 41; Philadelphia, 48; Pittsburgh, 50; and St. Louis, 28.

Data for the year 1936 show that in 38 cities 23.1 percent of the total receipts of fruits and vegetables, excluding bananas, was handled by chain stores (2, table 51).

These figures serve to show the relative significance of sales through chain groups and through other channels. Figures for individual commodities are not available, but in all probability percentages for some commodities are less than the average. There are reasons for believing, for example, that orange sales through chains in auction markets are substantially below 27 percent of the total retail sales in these markets.

3. If sales in carlots are to be made to all large-scale purchasers in auction markets, the probable effects of the withdrawal of the larger buyers upon the auctions as indicators of price should be carefully weighed. The problem of adjustment of auction supplies to the reduced proportion of demand represented by auction buyers would be a difficult one to solve because information regarding supplies of large buyers and their commitments would be difficult to assemble.

4. Present pricing policies of large-scale buyers in auction markets of some auction commodities are based on an arrival price to be determined at time of delivery in the light of auction price levels existing at the time. If the present value of the auction price of a commodity were reduced by removal of important buying support at auction, some substitute pricing arrangement would be necessary. With increased quantities moving through private sale, assembling of price information by sellers would be made increasingly difficult.

5. If increased quantities of a commodity now sold at auction are to be diverted through private sale, sellers must be prepared to assume increased credit risks. Many individual cooperative associations and other shippers handling single commodities or small lines of commodities would probably be in a very weak position compared to the auction companies in determining the credit worthiness of their customers and in following collection policies which would result in prompt payment for purchases.

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## Other Publications Available

In addition to this bulletin, the following publications on farmers' cooperative organizations are published by the Farm Credit Administration:

**Cooperative Purchasing of Farm Supplies**

Bulletin No. 1, *Joseph G. Knapp and John H. Lister*

**Accounting Principles for Cooperative Cotton Gin Associations**

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