December 5, 1960

To the Graduate Council:

I am submitting herewith a thesis written by Willie Kirby Davis entitled "The Wholesale Fresh Fruit and Vegetable Market Structure in Tennessee." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Economics.

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# THE WHOLESALE FRESH FRUIT AND VEGETABLE MARKET STRUCTURE IN TENNESSEE

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A Thesis

Presented to

The Graduate Council of

The University of Tennessee

---

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

---

by

Willie Kirby Davis

December 1960

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# CHAPTER I

## INTRODUCTION

Changes in consumer demand for fresh fruits and vegetables during the past two decades and the changing market structure of retail organizations have made it more difficult for wholesale firms and producers to meet the requirements of retailers. The inability of present wholesalers to compete successfully with chain organizations is also causing more shifts in buying habits and market structure. There has also been a movement away from the "hardware" items, such as onions, potatoes, citrus fruits, and apples, in favor of soft fruits and "wet vegetables," such as peaches, pears, lettuce, and tomatoes. A movement away from cooking vegetables in favor of salad vegetables has also occurred.[1]

These items which are becoming more important are also more susceptible to disease and spoilage, making it more difficult for producers and wholesale marketing firms to provide an adequate supply of fresh items free of defects throughout the year, which is presently being demanded by consumers. Thus the size of the marketing job has increased tremendously, requiring growers and distributors to be constantly alert in order to keep pace with changing demands.

Today a greater variety of produce is available throughout the year making prices more competitive in the fruit and vegetable market. A high elasticity of substitution also seems to exist between one fresh fruit or

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[1]U. S. Department of Agriculture, Agricultural Marketing Service, Chain Store Merchandising and Procurement Practices, Marketing Research Report No. 417 (Washington: Government Printing Office, July, 1960), p. 14.

vegetable item and another, with substitution readily occurring if either price or quality is not "right."[2]

No measures are available to weigh the changes which have been taking place in marketing channels and in structure of wholesale fruit and vegetable markets during the past two decades. Neither is information available as to the impact these changes have had on producers and marketing firms. The change in structure is associated with the growth of national, regional, and local chain stores and has greatly increased direct buying, which is requiring producers and wholesale suppliers of fresh fruits and vegetables to independent retailers to change their methods.

Our marketing system of farm products has almost completed a cycle since earlier days when direct buying was prominent, with few middlemen in the system. As the marketing task became more involved, products passed through more and more middlemen with specialized marketing firms arising. During the latter part of the nineteenth century farmers who raised fruits and vegetables were able to produce more than they could market locally and, with improved transportation facilities, it was possible to ship products a greater distance more economically than was possible prior to this period. Direct sales by farmers to consumers decreased during this period because it became easier and more profitable for farmers to ship their produce in larger quantities. After the development of refrigerated cars in 1890 a more rapid increase in shipments was realized from specialized areas to wholesalers, who distributed to surrounding cities.[3]

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[2] Ibid., p. 15.

[3] U. S. Department of Agriculture, Agricultural Marketing Service, Changing Marketing Channels for Farm Food, Marketing Research Report No. 350 (Washington: Government Printing Office, October, 1959), p. 19.

As marketing became more complex, public interest was developed and people began to present views on how some of the steps could be eliminated to market products more economically. Today the direct purchasing of fresh fruits and vegetables by chain stores gives them greater control over supply. This practice has been promoted by wholesalers organizing "voluntary chains" and independent retailers joining central buying organizations.

The Tennessee wholesale fruit and vegetable markets occupy an important place in the economy of Tennessee and also distribute fresh produce to nine other surrounding states. For the period 1949-57 the average income was $14,461,000 from fruits and vegetables marketed in Tennessee.[4] This production could possibly be expanded and a larger portion utilized on the fresh market if one had a better knowledge of the wholesale market structure, and how future operations will need to be organized for the marketing of high quality products at the most economical prices.

## I. THE PROBLEM

Despite the importance of fresh produce as a part of our food supply, little work has been done in Tennessee on the effectiveness of our wholesale firms in a changing market structure. The number of retail organizations in the whole country has declined about 20 per cent since 1935.[5] Grocery chains and cooperative groups controlled about 85 per cent of food

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[4]Tennessee Department of Agriculture, Agricultural Trends in Tennessee (third edition; Nashville: Agricultural Marketing Service, November, 1958), p. 16.

[5]Leon Garoian and Willard F. Mueller, Changes in the Market Structure of Grocery Retailing, 1940-58, Research Report No. 5 (Madison: Wisconsin Agricultural Experiment Station, April, 1960), p. 41.

sold through retail stores in 1958 (Table I). With this smaller number of buyers for a given supply, each buyer may have a more pronounced effect on market structure and one may assume from information given in Tables I and II that producers will be required to make changes to meet requirements of chain stores, which have been increasing their proportion of total food sales.

The function of wholesale distribution of purchasing large lots and breaking them down into smaller lots for sale to retailers and jobbers becomes less important with the growth of national, regional, and local chains. With the growth of chains and "voluntary cooperative" groups, direct buying was estimated to account for approximately 30 per cent of the total receipts in seventeen major cities in recent years, compared to 15 per cent in 1936.[6] Estimates listed by Progressive Grocer indicate that 90 per cent of the stores affiliated with chains having eleven or more stores buy direct. Direct buying is expected to continue to gain in prominence, which will require considerable change by wholesalers to compete with the larger chains, but with adequate planning for an economical operation a place still exists for wholesalers and prepackagers to supply small chains and jobbers with products which cannot be economically prepackaged at the shipping point. At the present time wholesalers and growers do not have adequate information to make plans for future changes to cope with the dynamic changes that are taking place in the marketing system.

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[6]U. S. Department of Agriculture, Changing Marketing Channels for Farm Food, op. cit., p. 27.

TABLE I

TYPES OF GROCERY CHAIN STORES, BY SIZE, NUMBER OF STORES, AND PER CENT OF TOTAL GROCERY STORE SALES, 1958

| Number included | Per cent of total grocery store sales in 1958 | |
|---|---|---|
| Corporate chains | | |
| 4 largest | 22.4 | |
| 4 next largest | 6.0 | |
| 12 next largest | 7.2 | |
| 30 next largest | 3.1 | |
| 182 others with over 10 stores | 3.0 | |
| 558 others with 4-10 stores | 1.3 | |
| 790 corporate chain total (19,400 stores) | | 43.0 |
| Cooperative and voluntary chains | | |
| 4 largest | 7.4 | |
| 4 next largest | 2.4 | |
| 12 next largest | 5.3 | |
| 443 others | 26.5 | |
| 463 cooperative and voluntary chain total (92,000 stores) | | 41.6 |
| Unaffiliated independents (173,600 stores) | | 15.4 |

Source: Leon Garoian and Willard F. Mueller, Changes in the Market Structure of Grocery Retailing, 1940-58, Research Report No. 5 (Madison: Wisconsin Agricultural Experiment Station, April, 1960), p. 7.

TABLE II

TOTAL GROCERY AND COMBINATION STORE SALES, AND CHAIN STORE SALES, 1940-1958

| Year | Total grocery and combination sales | Grocery chains of over three stores | Per cent of total grocery sales | Grocery chains of over ten stores | Per cent of total grocery sales |
|---|---|---|---|---|---|
| | (million $) | (million $) | | (million $) | |
| 1940 | 8,317 | 3,113 | 37.4 | | |
| 1945 | 14,330 | 4,769 | 33.3 | | |
| 1948 | 24,770 | 9,319 | 37.6 | 8,532 | 34.4 |
| 1950 | 26,412 | 10,140 | 38.4 | | |
| 1951 | 30,346 | 11,569 | 38.1 | | |
| 1952 | 32,238 | 12,089 | 37.5 | | |
| 1953 | 33,623 | 13,113 | 39.0 | | |
| 1954 | 34,993 | 13,997 | 40.0 | 13,553 | 38.7 |
| 1955 | 36,919 | 15,137 | 41.0 | 14,222 | 38.5 |
| 1956 | 39,180 | 16,456 | 42.0 | 15,894 | 40.5 |
| 1957 | 42,444 | 17,829 | 42.0 | 17,377 | 40.9 |
| 1958 | 44,546 | 19,155 | 43.0 | 18,590 | 41.7 |

Source: Leon Garoian and Willard F. Mueller, Changes in the Market Structure of Grocery Retailing, 1940-58, Research Report No. 5 (Madison: Wisconsin Agricultural Experiment Station, April, 1960), p. 5.

If direct buying continues to increase, small producers will find it difficult to dispose of their products at a profitable price using their present operations. Therefore increased emphasis will need to be placed on quantity, quality of produce, packing, and shipping operations required to meet the changing marketing system.

The purpose of this study is to:

1. Describe the present wholesale fresh fruit and vegetable marketing system in Chattanooga, Knoxville, Memphis, Nashville, and Tri-Cities area of Tennessee.
2. Determine impacts of changes in market structure on producers, wholesale agencies and shipping point marketing firms.
3. Determine the extent of future expansion which may be anticipated in direct buying as changes in structure of retailing take place.

## II. SCOPE OF STUDY

This study is part of a project on changes in market structure for fresh fruits and vegetables being conducted by the Fruit and Vegetable Division of the Agricultural Marketing Service, United States Department of Agriculture, covering thirty-four markets over the United States, in an attempt to determine the changes in market structure for the over-all fresh fruit and vegetable market.

This study includes 106 wholesale fresh fruit and vegetable firms and 13 chains in five market areas of Tennessee. The markets selected were Chattanooga, Knoxville, Memphis, Nashville, and Tri-Cities (Bristol,

Kingsport, Johnson City and Morristown). An attempt was made to interview all wholesalers, brokers, and repackers who handle fresh fruits and vegetables. Chain stores that have warehouses with produce departments were also interviewed.

The study is limited to wholesaling only and does not include retail organizations with the exception of retail chains which have "vertically integrated" wholesaling and retailing.

## III. RESEARCH PROCEDURE

Three types of questionnaires were used, a different type for each of the following: wholesalers, brokers, and chain stores. The organizations were broken down in this manner to sort the information from each type of firm in order to get the degree of existing competition and changes in the entire market structure. In each market all the firms were classified into groups on the basis of type of firm, volume, and commodity specialization. The list of firms was obtained from trade directories. A preliminary mail survey was taken to supply information for classification.

Wholesale handlers of fresh fruits and vegetables were grouped as follows on the basis of major function:

Chainstores

Voluntary chains and retailer cooperatives

Wholesale grocers

Merchant wholesalers of produce

Receivers

Jobbers

Truck jobbers

Repackers and prepackagers

Merchant truckers

Service wholesalers

Purveyors

Produce agents and brokers

Buying brokers

Selling brokers

Auctions

Distributors

They were further grouped within each type on the basis of commodity specialization--either a general line of fruits and vegetables or specialization in something less than the full line--annual volume.

Perfect competition was used as a norm in determining the dynamic market structure for the different types of firms. The volume to be moved, demand for additional services, competition to meet consumers' demands, and economies of scale were each taken into account to determine the degree of existing competition.

## IV. REVIEW OF LITERATURE

Very little work has been done on market structure for fresh fruits and vegetables in Tennessee or the United States. A study of the wholesale facilities in Nashville was made by the United States Department of Agriculture in 1951, and a study of the facilities in Knoxville in 1958, but these studies were of present facilities rather than of market structure.

A study was made by the North Carolina Agricultural Experiment

Station in 1958 on vegetable prices and market structure in southeast North Carolina. In that study it was hypothesized that if proper changes were made in market structure, the disadvantages of small scale production might be overcome. A very high proportion (88 per cent) of farms selling vegetables in the sample area sold less than $500 worth annually. This was found to present complications in large scale purchasing by chain stores and independent supermarkets.[7]

The study made by the Agricultural Experiment Station of the University of Wisconsin in April, 1960, on changes in market structure of grocery retailing, 1940-58, has already been mentioned. Mueller and Garoian found that in 1958, 790 corporate chains, each operating four or more stores, accounted for 43 per cent of all grocery store sales; in 1948, they had accounted for only 38 per cent. A decreasing number of chains were found to be doing an increasing share of the total grocery business. Unaffiliated independents accounted for 15 per cent of total grocery store sales, and only 27 per cent of independent sales in 1958, compared to their share of 54 per cent of independent sales in 1940. This indicated that chains and cooperative groups were continually increasing their share of the market.[8]

A study was published by the Agricultural Marketing Service, Marketing Economics Research Division, United States Department of Agriculture, in July, 1960, on chainstore merchandising and procurement practices. The

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[7]Richard A. King, Loyd C. Martin, and Arthur D. Seale Jr., Vegetable Prices and Market Structure, Technical Bulletin No. 134 (Raleigh: North Carolina Agricultural Experiment Station, August, 1958), p. 80.

[8]Mueller and Garoian, op. cit., p. 6.

merchandising and procurement practices of chain stores had a direct influence on marketing channels for fresh fruits and vegetables. In 1958, 285,000 grocery stores sold $44.1 billion of food; in 1935, 354,000 grocery stores sold $7.8 billion of food. The number of stores declined 19 per cent and average sales per store increased seven times. This study indicated that in 1958 an estimated 73 per cent of sales of independent grocery stores (single units and chains with ten stores or less) was made by stores affiliated with voluntary or cooperative groups. They also found that chains as a group increased their share from 26 to 35 per cent between 1935 and 1958; the national chains held fairly steady at 16 per cent. Regional and local chains showed increases, with voluntary and cooperative groups making a sharp increase (Figure 1).

It was found that each group strove to create for itself a favorable competitive position by combining various policies and practices in different ways, but they all followed the practice of utilizing fresh fruits and vegetables as a "traffic builder."[9]

## V. DEFINITIONS OF TERMS USED

Market structure: Bain defines market structure as "those characteristics of the organization of a market which seem to influence strategically the nature of competition and pricing within the market."[10]

Carlot receivers receive in large quantities and normally carry a complete line of fresh fruits and vegetables.

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[9]U. S. Department of Agriculture, Chain Store Merchandising and Procurement Practices, op. cit., p. 24.

[10]Joe S. Bain, Industrial Organization (New York: John Wiley and Sons, 1959), p. 7.

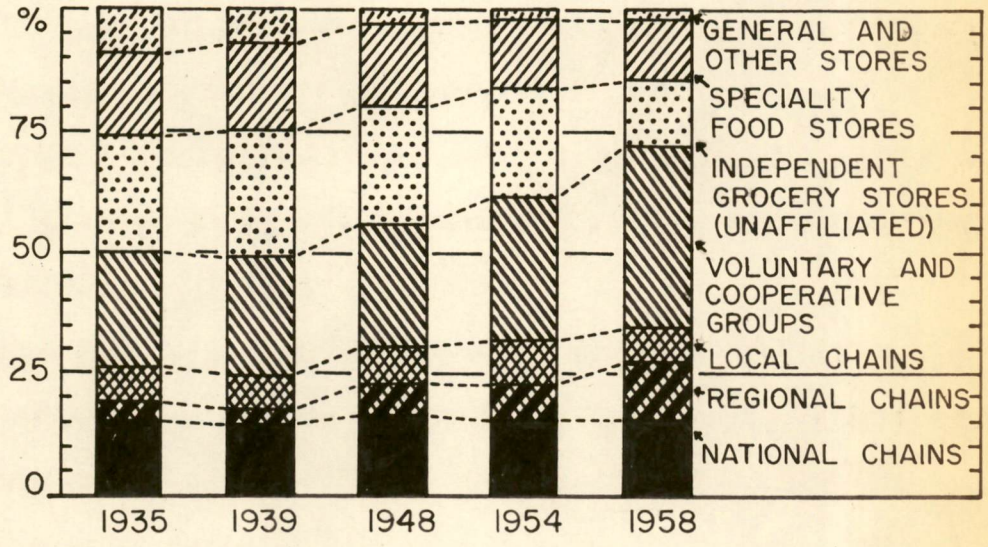



Figure 1. Changes in share of retail food sales 1935 to 1958. (From U. S. Department of Agriculture Marketing Research Report No. 417.)

Commodity specialists primarily specialize in either ripening and repacking tomatoes or storing and ripening bananas.

Truck jobber does all business from his truck; does not sell from a store or warehouse. Delivers merchandise and usually has regular customer route.

Jobber purchases more than 50 per cent of receipts from receivers, auctions, and other jobbers in the terminal market.

Purveyor: a jobber who sells 50 per cent or more of his volume to institutional outlets.

Service wholesaler buys more than 50 per cent from shipping point or local farmers, has store or warehouse, sometimes delivers and/or prepackages.

Selling broker negotiates sales on behalf of receivers, may represent a number of shippers at any one time; does not take title to or physically handle produce.

Corporate chain: eleven or more stores under single ownership.

Traffic builder: any product used to draw customers.

## CHAPTER II

## WHOLESALE FRESH FRUIT AND VEGETABLE MARKETS IN TENNESSEE

In this chapter wholesale facilities, types of wholesalers, unloads, and area of distribution are described for the Chattanooga, Knoxville, Memphis, Nashville, and Tri-Cities markets. The number and types of firms vary for the five cities; also the physical facilities and state of maintenance differ in each market. Tables III, V, VII, IX, and XI give indications of the increased percentage of total volume being handled by chain grocery stores in cities where voluntary and cooperative groups have organized.

### I. CHATTANOOGA MARKETS

#### Facilities

The wholesale facilities in Chattanooga were grouped primarily in one location, but warehouse facilities were old and poorly equipped for warehousing and displaying fresh fruits and vegetables. The majority of these facilities were located on the same plot as the farmers' market, making it very desirable for cash-and-carry customers. A new food terminal was built by a railroad company to provide warehouse and marketing facilities for both a farmers' and wholesalers' market, but it proved to be inadequate because it could be reached by only one street. Other modern facilities are not being built, possibly because of the uncertain future of independent fresh fruit and vegetable wholesalers, as indicated by proprietors. Figure 2 gives the location of present facilities in Chattanooga.

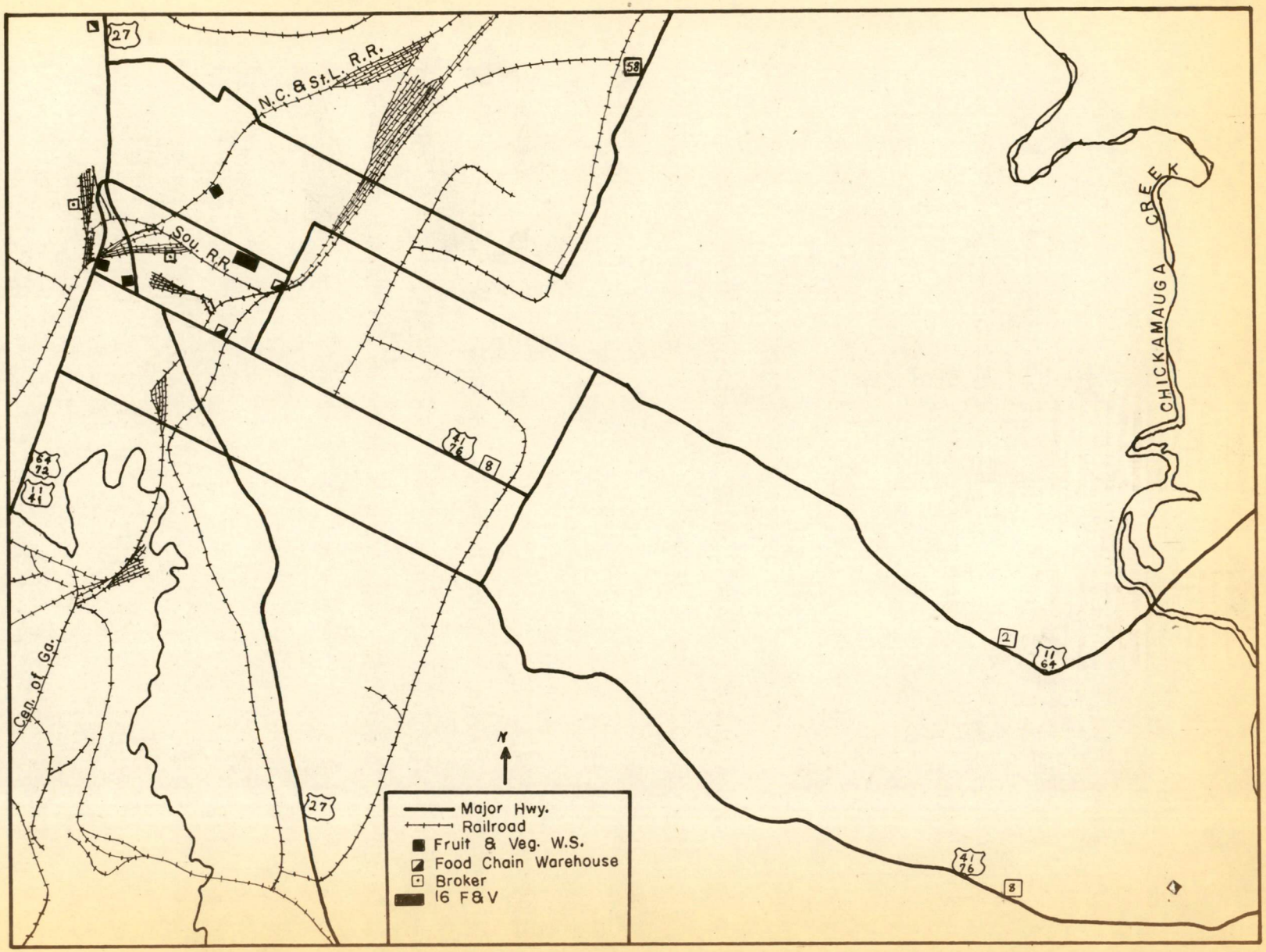



Figure 2. Location of wholesale facilities in Chattanooga, Tennessee, 1960.

Type of Wholesalers

Fresh fruits and vegetables were handled by twenty-three wholesalers in the Chattanooga market, classified in the following manner: ten carlot receivers, five commodity specialists, two jobbers, two truck jobbers, and four chains (Table III). These dealers provided a supply of fresh produce throughout the year to retailers and institutions in the trade area. Chattanooga had two brokers of fresh fruits and vegetables, one of which did not operate for the entire year.

Unloads

The twenty-three wholesale fruit and vegetable dealers in Chattanooga reported receipts of 4,257 carlots of produce, 21 per cent of which arrived by rail, and 79 per cent by truck. The total volume was broken down in the following manner: 2,672 carlots direct from shipping point, 329 carlots from local farmers, 815 carlots from other local sources, and 112 carlots from other terminal markets. Three hundred twenty-nine carlots of intermarket "second handling" was transacted. A total volume of 3,928 carlots of fresh fruits and vegetables passed through the Chattanooga market.

Distribution

Fresh fruits and vegetables were distributed from Chattanooga to twenty-four counties of Tennessee and to four other states. Sales were made to institutions and retailers locally, and also to points such as Spencer, Tennessee, to the north; Madisonville, Tennessee, to the east; Rome, Georgia, to the south; and Decatur, Alabama, to the southwest (Figure 10, Appendix A). The wholesale fresh fruit and vegetable trade

TABLE III

TYPES OF WHOLESALERS FOR FRESH FRUITS AND VEGETABLES BY VOLUME IN CHATTANOOGA, TENNESSEE, 1959[a]

| Type of wholesaler | Number | Volume | | Average |
|---|---|---|---|---|
| | | Carlots | Per cent | Carlots |
| Carlot receivers | 10 | 1,265 | 29.7 | 127 |
| Commodity specialists | 5 | 1,160 | 27.2 | 232 |
| Jobbers | 2 | 505 | 11.8 | 253 |
| Truck jobbers | 2 | 100 | 2.3 | 50 |
| Chains[b] | 4 | 1,227 | 29.0 | 307 |
| Total | 23 | 4,257[c] | 100.0 | 185 |

[a]Data were collected for calendar year ending December 1959.

[b]Chain stores are listed under wholesalers to include the wholesale buying of fresh fruits and vegetables by chain stores that had warehouses and produce divisions.

[c]Includes 329 carlots of intermarket "second handling."

area of Chattanooga extends eighty miles to the north and south, and approximately 150 miles to the northeast, northwest, and southwest. One dealer services Somerset and Monticello, Kentucky; shipments of tomatoes by repackers were sometimes made to Cleveland, Ohio.

As shown in Table IV, approximately 58 per cent of the total volume handled by Chattanooga dealers was distributed inside the city limits, 20 per cent was distributed outside the city but within the metropolitan area, and 22 per cent was distributed farther out with a range in distance serviced from 15 to 300 miles. Approximately 84 per cent of the dealers provided delivery service to customers in the trade area.

## II. KNOXVILLE MARKETS

### Facilities

The majority of wholesale fresh fruit and vegetable facilities in Knoxville were located on the Forest Avenue Market and were poorly maintained, with very little warehouse and display space available. Many of the dealers at the Forest Avenue Market displayed produce on the concrete sidewalk in front of their establishments. Even though facilities were poorly maintained, ripening rooms were available. The Forest Avenue dealers did not have rail sidings at their establishments, but dealers located outside this particular market did have access to rail spurs and better warehouse facilities. Carlot receivers, commodity specialists, and truck jobbers occupied a similar type of facilities. The Transportation and Facilities Research Division, A.M.S., U.S.D.A., Washington, D. C., conducted a study on wholesale marketing facilities in Knoxville, issued in May, 1960; therefore, the need for improved marketing facilities has

TABLE IV

VOLUME AND PER CENT OF FRESH FRUITS AND VEGETABLES DISTRIBUTED TO VARIOUS SECTIONS OF TRADE AREA, CHATTANOOGA, TENNESSEE, 1959

| Area of distribution | Volume | |
|---|---|---|
| | Carlots | Per cent |
| City | 2,278 | 57.9 |
| Metropolitan | 786 | 20.0 |
| Outside metropolitan | 864 | 22.1 |
| Total | 3,928[a] | 100.0 |

[a]Does not include 329 carlots of intermarket "second handling."

been realized. Figure 3 gives the location of present facilities in Knoxville.

## Types of Wholesalers

Fresh fruits and vegetables were handled by thirty-two wholesalers in the Knoxville market, classified in the following manner: eighteen carlot receivers, six commodity specialists, six truck jobbers, and two chains (Table V). In addition to this, three brokers of fresh fruits and vegetables serve the Knoxville market. The majority of these dealers were located on the Forest Avenue Market.

## Unloads

The thirty-two wholesale fruit and vegetable dealers in Knoxville reported receipts of 7,297 carlots of fresh produce, of which 26 per cent arrived by rail, and 74 per cent by truck. The total volume was broken down in the following manner: 6,069 carlots direct from shipping point, 182 carlots from local farmers, 204 carlots from other local sources, 478 carlots from other terminal markets, and 364 carlots of intermarket "second handling" was transacted. A total volume of 6,933 carlots of fresh fruits and vegetables passed through the Knoxville market. In addition to the above volume, one chain supplied their stores from warehouses located outside of the Knoxville market, but would not reveal the number of carlots shipped to their Knoxville stores. Another chain shipped supplies of fresh fruits and vegetables to their Knoxville stores from Nashville, Tennessee.

## Distribution

Fresh fruits and vegetables were distributed to four states other than Tennessee from the Knoxville market. Sales were made to retailers

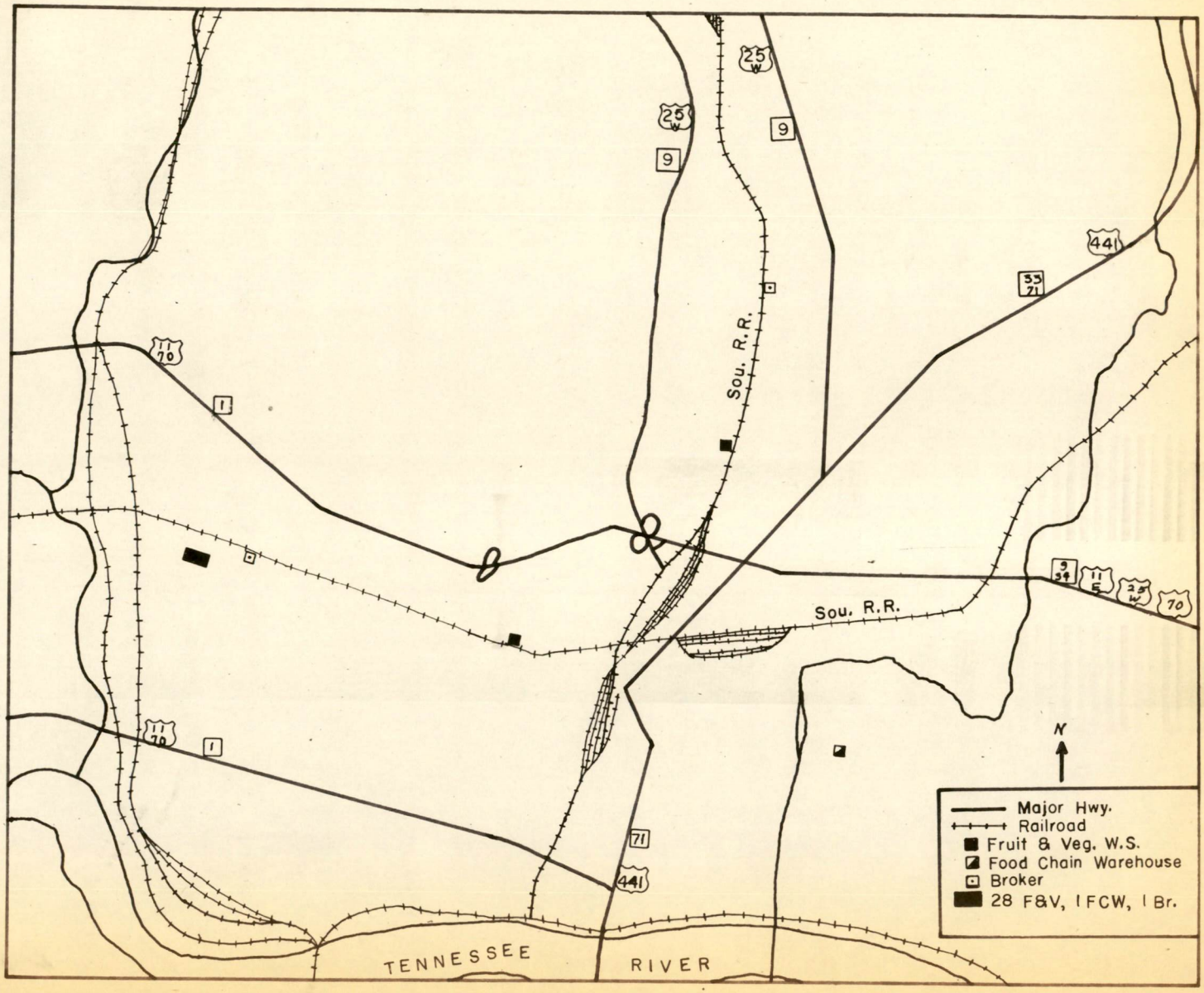



Figure 3. Location of wholesale facilities in Knoxville, Tennessee, 1960.

TABLE V

TYPES OF WHOLESALERS FOR FRESH FRUITS AND VEGETABLES BY VOLUME IN KNOXVILLE, TENNESSEE, 1959[a]

| Type of wholesaler | Number | Volume | | Average |
|---|---|---|---|---|
| | | Carlots | Per cent | Carlots |
| Carlot receivers | 18 | 3,714 | 50.9 | 206 |
| Commodity specialists | 6 | 750 | 10.3 | 125 |
| Truck jobbers | 6 | 559 | 7.6 | 93 |
| Chains[b,c] | 2 | 2,274 | 31.2 | 1,137 |
| Total | 32 | 7,297[d] | 100.0 | 228 |

[a]Data were collected for calendar year ending December, 1959.

[b]Chain stores are listed under wholesalers to include the wholesale buying of fresh fruits and vegetables by chain stores that had warehouses and produce divisions.

[c]One other chain organization had a warehouse located outside the Knoxville trade area and would not disclose information as to volume shipped to Knoxville stores.

[d]Includes 364 carlots of intermarket "second handling."

and institutions locally, to small towns throughout the trade area and to truck jobbers who provided delivery service to more distant retailers. Sales were made to such points as Norton, Virginia, to the northeast; Newport, Tennessee, to the east; Etowah, Tennessee, to the southwest; and Crossville, Tennessee, to the west (Figure 11, Appendix A). The wholesale fresh fruit and vegetable trade area extends one hundred miles to the northeast, eighty miles to the southwest, and fifty miles to the east. When the tomato repackers oversupplied the Knoxville market, shipments were made to points outside the regular trade area, such as Cleveland, Ohio, and Philadelphia, Pennsylvania.

As shown in Table VI approximately 34 per cent of the total volume of fresh fruits and vegetables handled by Knoxville dealers was distributed within the Knoxville city limits, 6 per cent was distributed in the metropolitan area outside the city, and 60 per cent was distributed farther out, with a range in distance serviced from 90 to 250 miles. Forty per cent of the dealers provided delivery service to customers in the trade area.

## III. MEMPHIS MARKETS

### Facilities

No central market area for wholesale fresh fruits and vegetables existed in Memphis. The wholesalers and chain store warehouses were scattered throughout the city causing some difference in pricing and cartage expense, and much inconvenience to customers. As a result of the scattered location of facilities in Memphis, a large number of wholesalers employed salesmen and provided delivery service to promote business. The individual

TABLE VI

VOLUME AND PER CENT OF FRESH FRUITS AND VEGETABLES DISTRIBUTED TO VARIOUS SECTIONS OF TRADE AREA, KNOXVILLE, TENNESSEE, 1959

| Area of distribution | Volume | |
|---|---|---|
| | Carlots | Per cent |
| City | 2,357 | 33.9 |
| Metropolitan | 416 | 6.0 |
| Outside metropolitan | 4,160 | 60.1 |
| Total | 6,933[a] | 100.0 |

[a]Does not include 364 carlots of intermarket "second handling."

wholesalers had modern or adequately maintained facilities with rail sidings available at most establishments. Figure 4 gives the location of present facilities in Memphis.

## Types of Wholesalers

Fresh fruits and vegetables were handled by twenty wholesalers in the Memphis market, classified in the following manner: six carlot receivers, nine commodity specialists, two jobbers, and three chains (Table VII). In addition to these dealers Memphis had six brokers of fresh fruits and vegetables who serviced the Memphis area.

## Unloads

The twenty wholesale fruit and vegetable dealers in Memphis reported receipts of 10,927 carlots of produce, of which 28 per cent arrived by rail, and 72 per cent by truck. The total volume was broken down in the following manner: 6,878 carlots direct from shipping point, 879 carlots from local farmers, 2,706 carlots from other local sources, and 67 carlots from other terminal markets. Three hundred ninety-seven carlots of intermarket "second handling" was transacted. A total volume of 10,530 carlots of fresh fruits and vegetables passed through the Memphis market.

## Distribution

Fresh fruits and vegetables were distributed from Memphis to six other states besides a large sector of West Tennessee. Sales were made to retailers and institutions locally and throughout the trade area, and to truck jobbers from out of town who made deliveries to independent retailers. Sales were made to Metropolis, Illinois, to the north; Huntsville, Alabama,

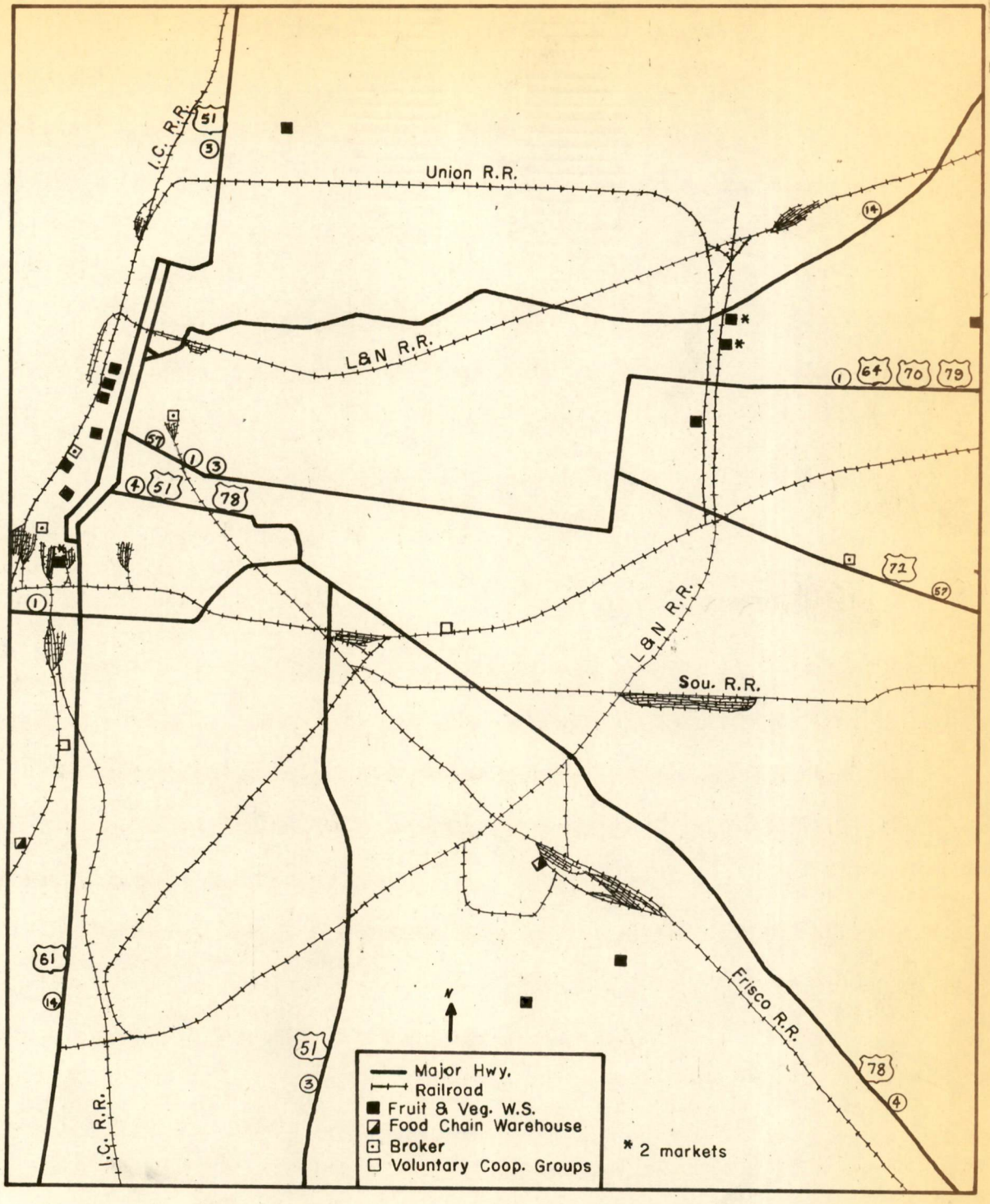



Figure 4. Location of wholesale facilities in Memphis, Tennessee, 1960.

TABLE VII

TYPES OF WHOLESALERS FOR FRESH FRUITS AND VEGETABLES BY VOLUME IN MEMPHIS, TENNESSEE, 1959[a]

| Type of wholesaler | Number | Volume | | Average |
|---|---|---|---|---|
| | | Carlots | Per cent | Carlots |
| Carlot receivers | 6 | 3,890 | 35.6 | 648 |
| Commodity specialists | 9 | 2,371 | 21.7 | 263 |
| Jobbers | 2 | 90 | 0.8 | 45 |
| Chains[b,c] | 3 | 4,576 | 41.9 | 1,525 |
| Total | 20 | 10,927[d] | 100.0 | 546 |

[a]Data were collected for calendar year ending December, 1959.

[b]Chain stores are listed under wholesalers to include the wholesale buying of fresh fruits and vegetables by chain stores that had warehouses and produce divisions.

[c]Two other chains located in Memphis would not disclose information as to volume of business.

[d]Includes 397 carlots of intermarket "second handling."

to the east; Jackson, Mississippi, to the south; and Russelville, Arkansas, to the west (Figure 12, Appendix A). The wholesale fresh fruit and vegetable trade area extends about 150 miles in all directions from Memphis. Shipments of tomatoes were also made to Chicago, Illinois, and Cincinnati, Ohio.

As shown in Table VIII, about 62 per cent of the total volume handled by Memphis dealers was distributed inside the city limits, 8 per cent was distributed outside the city but within the metropolitan area, and 30 per cent was distributed farther out, with a range in distance serviced from 50 to 300 miles. Approximately 94 per cent of the Memphis dealers provided delivery service, the highest percentage of any market in the study.

## IV. NASHVILLE MARKETS

### Facilities

The facilities used by Nashville wholesale dealers varied widely, with the smaller dealers operating from buildings which were designed for some other use, such as retail establishments. Therefore less efficiency was realized in their handling of fresh fruits and vegetables. The larger firms occupied modern facilities with adequate display rooms and storage spaces. Many of the establishments had rail sidings, and team tracks were conveniently located to all sections of the market district. Figure 5 gives the location of present facilities in Nashville.

### Types of Wholesalers

Fresh fruits and vegetables were handled by twenty-seven wholesalers in the Nashville market, classified in the following manner: eleven carlot

TABLE VIII

VOLUME AND PER CENT OF FRESH FRUITS AND VEGETABLES DISTRIBUTED TO VARIOUS SECTIONS OF TRADE AREA, MEMPHIS, TENNESSEE, 1959

| Area of distribution | Volume | |
|---|---|---|
| | Carlots | Per cent |
| City | 6,529 | 62.0 |
| Metropolitan | 842 | 8.0 |
| Outside metropolitan | 3,159 | 30.0 |
| Total | 10,530[a] | 100.0 |

[a]Does not include 397 carlots of intermarket "second handling."

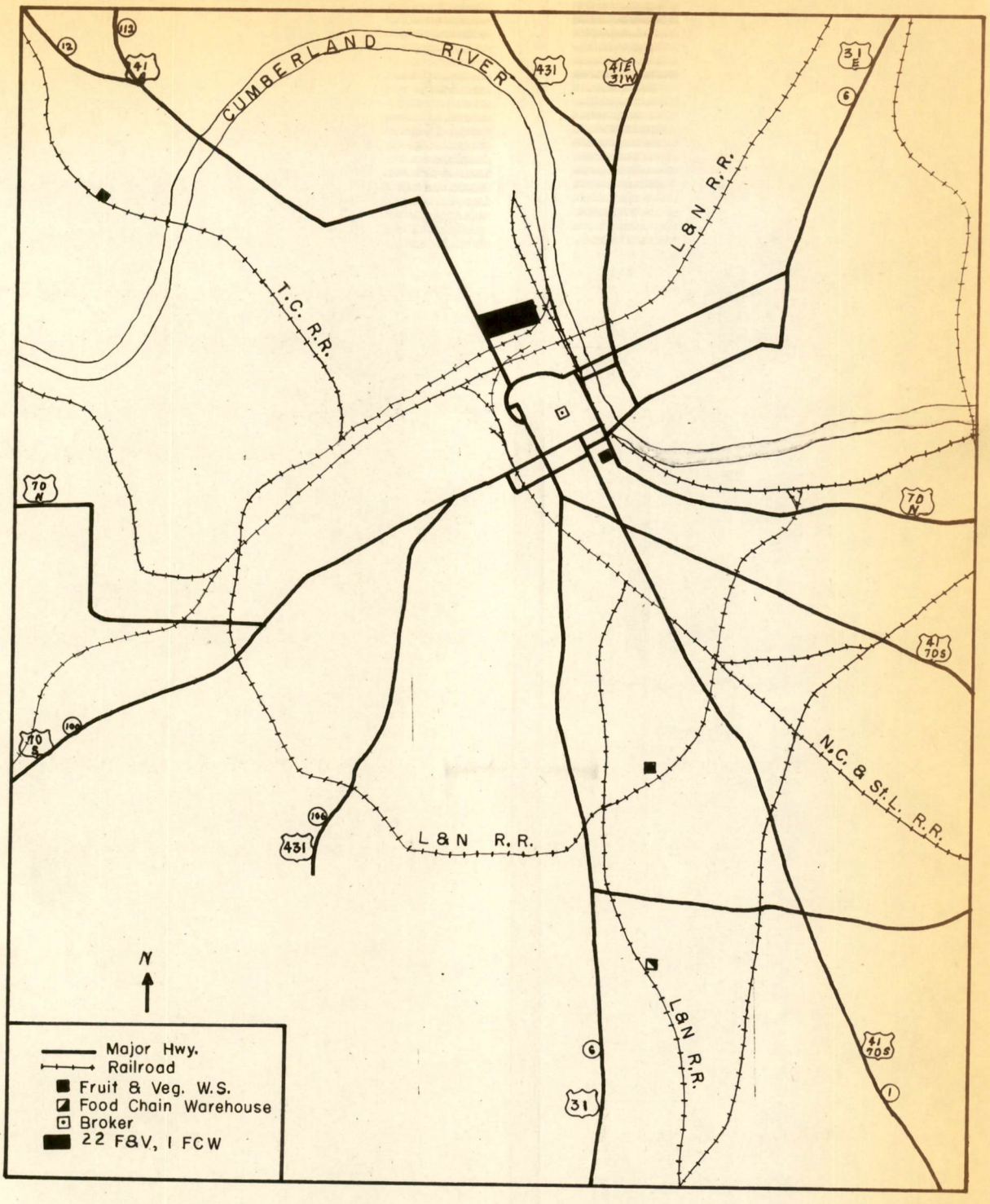



Figure 5. Location of wholesale facilities in Nashville, Tennessee, 1960.

receivers, four commodity specialists, ten jobbers, and two chain stores (Table IX). Nashville had one fresh fruit and vegetable broker to serve the entire market area. These wholesalers were located primarily in the north central section of the city, known as the market district. Several of the independent dealers did both receiving and jobbing business, with the smaller firms doing strictly jobbing. The farmers' market was also located in the market district, with three jobbers operating from the open shed inside the market.

Unloads

The wholesale fruit and vegetable dealers in Nashville reported receipts of 7,520 carlots of produce, 29 per cent of which arrived by rail, and 71 per cent by truck. The volume was broken down in the following manner: 5,535 carlots direct from shipping point, 553 carlots from local farmers, 379 carlots from other local sources, and 61 carlots from other terminal markets. Nine hundred ninety-two carlots of intermarket "second handling" was transacted, giving a total volume of 6,528 carlots of fresh fruits and vegetables. In addition to this, two chains serviced from Memphis would not disclose information as to the volume they handled.

Distribution

Fresh fruits and vegetables were distributed from Nashville to forty-five counties of Middle Tennessee and to four states other than Tennessee. Sales were made to retailers and institutions throughout the trade area and to truck jobbers who delivered to independent retailers. Occasionally sales were made to Metropolis, Illinois; Fort Knox, Kentucky; Evansville, Indiana; and Birmingham, Alabama (Figure 13, Appendix A). One

TABLE IX

TYPES OF WHOLESALERS FOR FRESH FRUITS AND VEGETABLES BY VOLUME IN NASHVILLE, TENNESSEE, 1959[a]

| Type of wholesaler | Number | Volume | | Average |
|---|---|---|---|---|
| | | Carlots | Per cent | Carlots |
| Carlot receivers | 11 | 5,330 | 70.9 | 485 |
| Commodity specialists | 4 | 386 | 5.1 | 97 |
| Jobbers | 10 | 687 | 9.1 | 69 |
| Chains[b,c] | 2 | 1,117 | 14.9 | 559 |
| Total | 27 | 7,520[d] | 100.0 | 279 |

[a]Data were collected for calendar year ending December, 1959.

[b]Chain stores are listed under wholesalers to include the wholesale buying of fresh fruits and vegetables by chain stores that have warehouses and produce divisions.

[c]Two corporate chains were serviced from Memphis and would not disclose information as to volume of business.

[d]Includes 992 carlots of intermarket "second handling."

wholesaler interviewed provided scheduled delivery services to retailers in the Nashville trade area to supply fresh produce three times per week.

As shown in Table X, about 43 per cent of the total volume handled by Nashville dealers was distributed within the city limits, 26 per cent outside the city but within the metropolitan area, and 31 per cent was distributed farther out, with a range in distance served from 35 to 140 miles. Approximately 88 per cent of the Nashville dealers provided delivery service to customers in the trade area.

## V. TRI-CITIES (KINGSPORT, JOHNSON CITY, AND BRISTOL) AND MORRISTOWN MARKETS

### Facilities

Various types of facilities were used by the Tri-Cities and Morristown dealers; some had modern warehouse buildings, with well-arranged ripening rooms and unloading ramps, while others were using poorly maintained warehouses with many inadequacies. One grocery chain bought fresh produce direct from the shipping point and supplied its stores from trucks without having a produce warehouse. Morristown and Johnson City had the largest firms in this section of Tennessee. Figure 6 gives the location of present facilities in the Tri-Cities area.

### Types of Wholesalers

Fresh fruits and vegetables were handled by seventeen wholesalers in Upper East Tennessee. They were classified in the following manner: five carlot receivers, six commodity specialists, four truck jobbers, and two chain stores (Table XI). These wholesalers were scattered over Upper East Tennessee, with four in Kingsport, six in Bristol, four in Johnson

TABLE X

VOLUME AND PER CENT OF FRESH FRUITS AND VEGETABLES DISTRIBUTED TO VARIOUS SECTIONS OF TRADE AREA, NASHVILLE, TENNESSEE, 1959

| Area of distribution | Volume | |
|---|---|---|
| | Carlots | Per cent |
| City | 2,806 | 42.9 |
| Metropolitan | 1,698 | 26.1 |
| Outside metropolitan | 2,024 | 31.0 |
| Total | 6,528[a] | 100.0 |

[a]Does not include 992 carlots of intermarket "second handling."

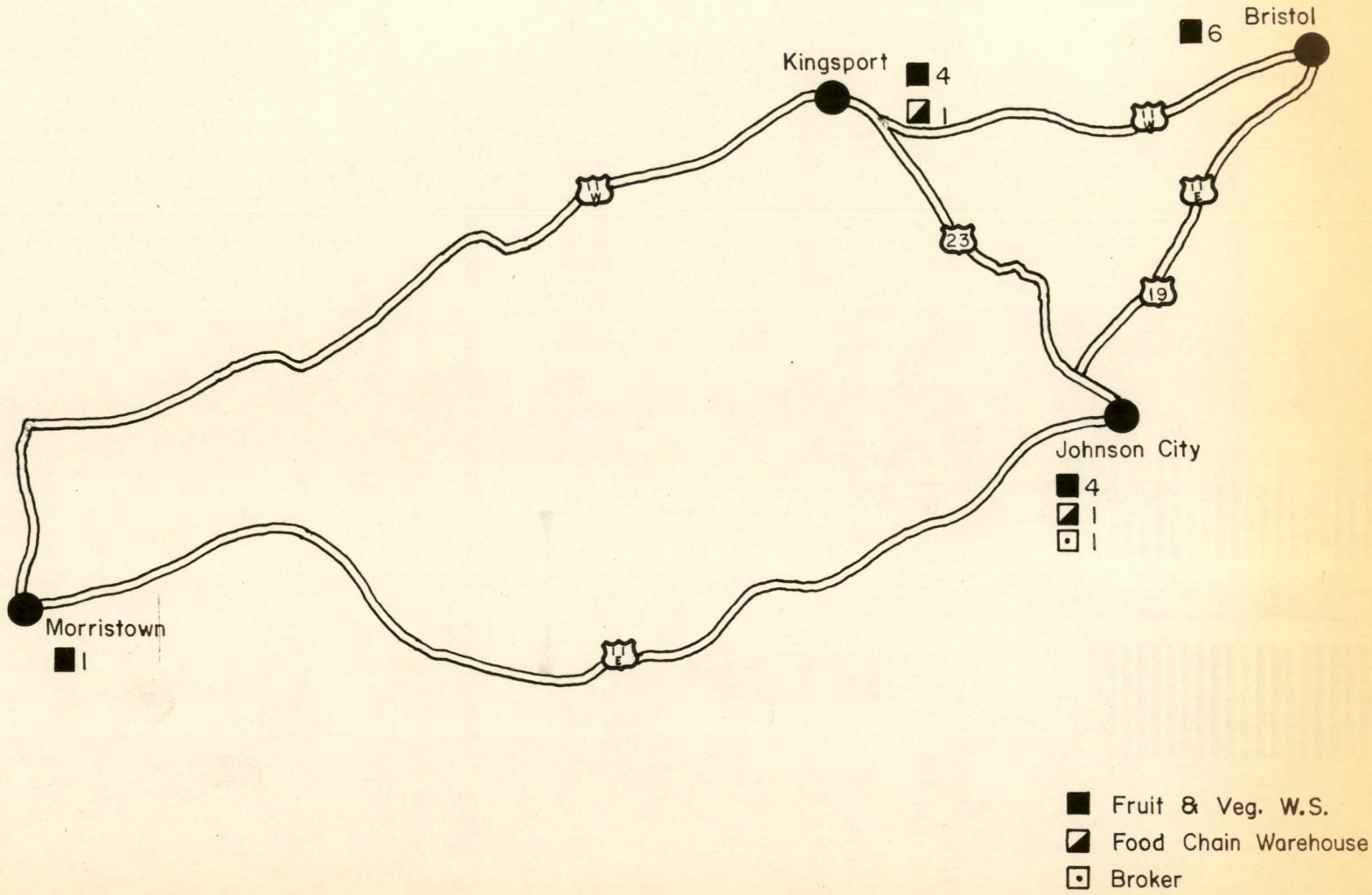



Figure 6. Location of wholesale facilities in Tri-Cities Area and Morristown, Tennessee, 1960.

TABLE XI

TYPES OF WHOLESALERS FOR FRESH FRUITS AND VEGETABLES BY VOLUME IN TRI-CITIES AREA,[a] TENNESSEE, 1959[b]

| Type of wholesaler | Number | Volume | | Average |
|---|---|---|---|---|
| | | Carlots | Per cent | Carlots |
| Carlot receivers | 5 | 3,042 | 70.3 | 608 |
| Commodity specialists | 6 | 595 | 13.8 | 99 |
| Truck jobbers | 4 | 98 | 2.3 | 25 |
| Chains[c] | 2 | 590 | 13.6 | 295 |
| Total | 17 | 4,325[d] | 100.0 | 254 |

[a]Kingsport, Johnson City, Bristol, and Morristown.

[b]Data were collected for calendar year ending December, 1959.

[c]Chain stores are listed under wholesalers to include the wholesale buying of fresh fruits and vegetables by those that have warehouses and produce divisions.

[d]Includes 59 carlots of intermarket "second handling."

City, and one in Morristown. In addition to these independent wholesalers, one grocery chain was located in Kingsport, and one in Johnson City. One supermarket operator in Kingsport also did his own buying and handling of fresh fruits and vegetables direct from shipping point. One brokerage firm was located in this area with offices in Bristol and Johnson City.

Unloads

The seventeen wholesale fruit and vegetable dealers in this market district reported receipts of 4,325 carlots of which 24 per cent arrived by rail, and 76 per cent by truck. The total volume was broken down in the following manner: 3,869 carlots direct from shipping point, 151 carlots from other local sources, 246 carlots from other terminal markets, and 59 carlots of "second handled" intermarket transactions, giving a total volume of 4,266 carlots of fresh fruits and vegetables.

Distribution

Fresh fruits and vegetables were distributed to sixteen counties of Upper East Tennessee and to three other states. Sales were made throughout the area by both wholesalers and truck jobbers. The wholesale dealer located in Morristown provided delivery service to distant points such as Etowah, Rockwood, and Gatlinburg, Tennessee; London and Ashland, Kentucky; Bluefield, West Virginia; and Radford, Virginia (Figure 14, Appendix A).

As shown in Table XII about 29 per cent of the total volume handled by dealers in this section was distributed within what is referred to as the metropolitan area, and 71 per cent was distributed farther out. Approximately 87 per cent of the dealers provided delivery service to customers.

TABLE XII

VOLUME AND PER CENT OF FRESH FRUITS AND VEGETABLES DISTRIBUTED TO VARIOUS SECTIONS OF TRADE AREA, TRI-CITIES,[a] UPPER EAST TENNESSEE, 1959

| Area of distribution | Volume | |
|---|---|---|
| | Carlots | Per cent |
| City and metropolitan | 1,237 | 29.0 |
| Outside metropolitan | 3,029 | 71.0 |
| Total | 4,266[b] | 100.0 |

[a]Kingsport, Johnson City, Bristol, and Morristown.

[b]Does not include 59 carlots of intermarket "second handling."

## CHAPTER III

## MARKET STRUCTURE

The term "market structure" suggests some characteristic or condition in the fresh fruit and vegetable market which influences the behavior and performance of firms therein. In some way it influences the forces of supply and demand, with markets varying in their performance as structural characteristics change.

Factors which affect the decisions of marketers may be placed in three categories: (1) those external to the market, (2) those internal to individuals operating in the market (e.g., buyers' attitudes or the whimsey of a seller's wife), (3) those peculiar to and significantly influential in the market itself. Under category three usually falls the number of buyers and sellers in the market.[1] The two most commonly named characteristics in discussing market structure are number of operators in the market and product differentiation. These two characteristics determine in large measure the "power relations."[2]

A large number of buyers and sellers in a market leads to atomistic power relations with neither buyer nor seller being able to influence the market. Economic theory suggests that a firm's competitive behavior is largely determined by the market structure in which it operates. Therefore, to determine the market structure of wholesale fruit and vegetable markets,

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[1] William Cochrane, "The Market as a Unit of Inquiry," Journal of Farm Economics, XXXIX (February, 1957), 29-30.

[2] Ibid.

an investigation must be made of product differentiation, market concentration, number of firms, and nature of barriers.

## I. MARKETING SYSTEM

### Perfect Competition

The four requirements of perfect competition are: (1) a large number of buyers and sellers, (2) a homogeneous commodity, (3) close contact of buyers and sellers, and no discrimination on the part of buyers.[3] The atomistic power relations on the producer's (seller) side possessed many of the conditions for perfect competition. The producers made up a large number of sellers, each one being unable to affect the market. A certain degree of homogeneity existed between grades of produce, in that buyers did not prefer the product of one seller over another of the same grade. There was no discrimination on the part of buyers except in being able to purchase the quantity and quality as required by their firms. Even though some of the characteristics of perfect competition existed, the market could not be so classified as the number of buyers were few and market knowledge limited.

The decreasing number of wholesale buyers who handle the supply of fresh fruits and vegetables was causing an increase in size of lot demanded. This was requiring a large number of small atomistic sellers to alter their marketing procedure so they could maintain a competitive position in the market. If proper changes were made to meet the changing market structure, marketing margins would be reduced, reflecting a lower cost. A given amount

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[3]Kenneth E. Boulding, Economic Analysis (third edition; New York: Harper and Brothers, 1955), p. 45.

spent for fresh produce in a competitive market and a reduction in marketing cost would mean more added to farm income in the short run. In the long run this would mean that producers, distributors, and consumers all benefit.[4]

## II. IMPERFECTIONS IN THE MARKET

The wholesale structure for fresh fruits and vegetables had many of the characteristics common to firms operating under oligopolistic conditions. The few wholesale firms in each market were placed in market sub-groups based on number of firms in the market and differentiation of products or services as influenced by size of firm, with each seller supplying a significant part of the total demand. It was found that chain groups made up one sub-group and merchant wholesalers another. The sub-group of corporate chains and voluntary and cooperative groups seemed to place the retailing of fresh produce by these large groups in an oligopoly situation, whereas the producer was faced with fewer and larger wholesale firms to distribute the product, placing him in a position of less bargaining power or facing an oligopsonistic situation. There was a high degree of substitution by producers (sellers) between the two sub-groups. The degree of substitution between market sub-groups determined the nature of the demand and supply curves for the chain group and merchant wholesalers.[5]

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[4]Geoffrey S. Shepherd, Marketing Farm Products (Ames: The Iowa State College Press, 1955), p. 14.

[5]Homer C. Evans, The Nature of Competition Among Apple Processors in the Appalachian Area, Bulletin 405 (Morgantown: West Virginia Agricultural Experiment Station, June, 1957), p. 15.

Another imperfection in the wholesale fresh fruit and vegetable wholesale market was price leadership by large firms, with about 60 per cent of the merchant wholesalers being unable to follow an independent pricing policy. In other words, chain and voluntary cooperative groups were forcing smaller firms to follow their prices because the small firms were handling a relatively small volume, which was sold to independent retailers who were in competition with large chains and cooperative groups.

As illustrated in Figure 7 the oligopolist will sell some quantity of produce Q at a price of P. If he raises his price above P, he may assume that his rivals, the small merchant wholesalers, will not change price and his sales will fall off rapidly along DD'. If he reduces his price below P, his rivals will most likely match his reduction or under cut his price, in which case his sales will increase along D'D". This reaction to price change gives a "kinked" demand curve. Oligopoly pricing is generally uncertain because of rivals' reactions to change.[6]

## III. NUMBER OF FIRMS BY SIZE

It was found that wholesale fresh fruit and vegetable markets in Tennessee consisted of a relatively small number of wholesale buyers of fresh produce, with 34 per cent of them selling from one to fifty carlots per year and 53 per cent selling less than one hundred (Table XIII). Many of these small firms, which were serviced by independent carlot receivers, indicated during the survey that they intended to go out of business if chain stores and voluntary cooperative groups continued to grow. Memphis

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[6]Bain, op. cit., p. 280.

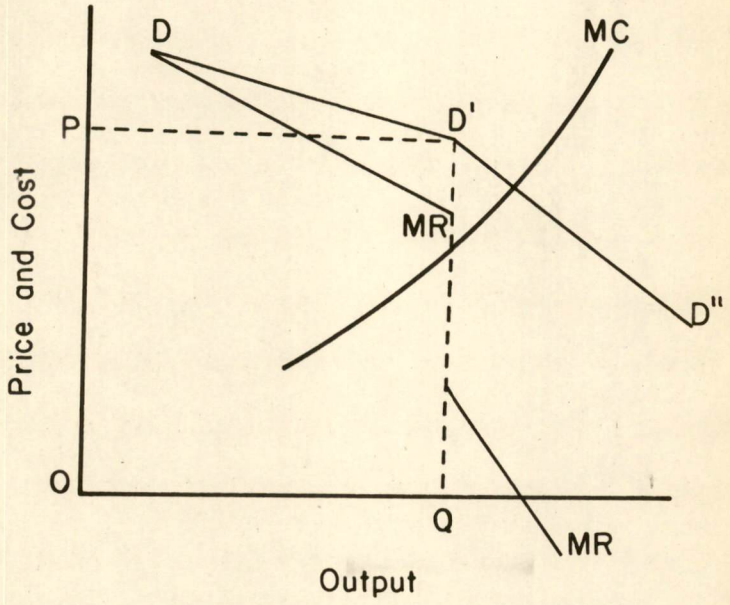



Figure 7. Demand under conditions of oligopoly.

TABLE XIII

NUMBER OF WHOLESALE FRESH FRUIT AND VEGETABLE FIRMS AND CHAINS BY SIZE, IN THE MAJOR WHOLESALE TRADE AREAS OF TENNESSEE, 1959

| Carlot volume | Chattanooga | | Knoxville | | Memphis | | Nashville | | Tri-Cities | | Total | | Per cent | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Wholesalers | Chains | Wholesalers | Chains | Wholesalers | Chains | Wholesalers | Chains | Wholesalers | Chains | Wholesalers | Chains | Wholesalers | Chains |
| | | | | | | | Number | | | | | | | |
| 1-50 | 7 | | 10 | | 3 | | 9 | | 7 | | 36 | | 34 | |
| 51-100 | 4 | | 7 | | 3 | | 4 | | 3 | | 21 | | 19 | |
| 101-150 | 1 | 1 | 2 | | | | 1 | | 1 | 1 | 5 | 2 | 5 | 15 |
| 151-300 | 2 | 1 | 6 | | 6 | | 5 | 1 | | | 19 | 2 | 18 | 15 |
| 301-450 | 4 | 1 | 3 | | | | | | 1 | 1 | 8 | 2 | 7 | 15 |
| 451-600 | 1 | 1 | 2 | 1 | 2 | | | 1 | | | 5 | 3 | 5 | 24 |
| 601-750 | | | | | | | 3 | | 2 | | 5 | | 5 | |
| 751-900 | | | | | 1 | 1 | 2 | | | | 3 | 1 | 3 | 7 |
| 901-1050 | | | | | 1 | | 1 | | | | 2 | | 2 | |
| Over 1050 | | | | 1 | 1 | 2 | | | 1 | | 2 | 3 | 2 | 24 |
| Total | 19 | 4 | 30 | 2 | 17 | 3 | 25 | 2 | 15 | 2 | 106[a] | 13[b] | 100 | 100 |

[a]Total wholesale volume, 24,542 carlots; average per wholesaler, 232 carlots.

[b]Total chain volume, 9,784 carlots; average per chain, 753 carlots.

is a good example of what may happen as the population grows and markets become larger. Memphis had the smallest number of independent wholesale fresh fruit and vegetable firms, and the largest volume of business of any area in the state, with the exception of Tri-Cities, which had fifteen independent dealers, but about 60 per cent less volume. Three of the firms in Memphis did under fifty carlots business per year and only six (35 per cent) did from one to one hundred. Fifty-two per cent in Nashville and 67 per cent in the Tri-Cities area handled from one to one hundred carlots per year. As markets grew, chain stores and voluntary cooperative groups seemed to thrive, causing fewer and fewer wholesale buyers of fresh produce to exist, changing the competitive position of small wholesalers and producers. Table XIII also shows that 24 per cent of the chain stores handled over 1,050 carlots of fresh produce per year, compared with only 2 per cent of the independent firms handling that much.

## IV. SOURCES OF SUPPLIES

The fresh fruits and vegetables handled by wholesalers and chains in Tennessee originated in local production areas of Tennessee as well as in major production areas throughout the United States, Cuba, Mexico, and South America. Most of the receipts were shipped from western states and Florida.

A large volume of business was done through direct buying, with 73 per cent of the receipts being shipped direct from shipping point and 6 per cent of the wholesalers' total receipts being purchased direct from local farmers, giving a total of 79 per cent of all receipts in the markets sampled as direct purchases. Carlot receivers had the largest volume of direct

receipts, about 56 per cent. Commodity specialists handled 20 per cent of the direct receipts, jobbers 4 per cent, and chain stores 20 per cent.

The size and type of firms had a significant influence on source of supply since carlot receivers handled about 50 per cent of the total volume, and 81 per cent of the carlot receivers receipts were direct from shipping point. Commodity specialists handled only 15 per cent of the total volume, but 97 per cent of all receipts by commodity specialists were direct from shipping point. Jobbers handled 6 per cent of the total volume, of which 53 per cent was direct from shipping point. This high percentage of direct receipts by jobbers was accounted for by truck jobbers doing a large volume of their business during the fruit and melon season, at which time trips were made to shipping points for supplies. Chain stores with warehouse facilities and produce divisions handled about 29 per cent of the total volume. Fifty per cent of the chain volume was purchased direct from shipping point (Table XIV). Voluntary and cooperative groups were included in chain volume, with the smaller organizations purchasing a considerable amount from sources other than shipping point.

A statistical analysis of Table XIV showed a significant difference between sources of supply at the .05 level.

## V. OUTLETS INCLUDING VARIATIONS

The outlets for wholesale fresh fruits and vegetables consisted of corporate chains, voluntary chains, independent grocers, institutions, and other buyers, such as jobbers and specialty food stores. Thirty-two per cent, or 7,768 carlots of wholesale sales by independent fresh fruit and vegetable wholesalers, were made to chain stores, with chain stores handling

TABLE XIV

SOURCES OF SUPPLY FOR FRESH FRUIT AND VEGETABLE WHOLESALERS, BY VOLUME AND PER CENT OF PURCHASES FROM EACH SOURCE, TENNESSEE, 1959

| Sources of supply | Carlot receivers | | Commodity spec. | | Jobbers | | Chains | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. of carlots | Per cent of total | No. of carlots | Per cent of total | No. of carlots | Per cent of total | No. of carlots | Per cent of total | No. of carlots | Per cent of total |
| Shipping point | 13,903 | 80.7 | 5,118 | 97.3 | 1,088 | 53.4 | 4,914 | 50.2 | 25,023 | 72.9 |
| Local farmers | 836 | 4.8 | 34 | .6 | 157 | 7.6 | 970 | 9.9 | 1,997 | 5.8 |
| Other local | 1,992 | 11.5 | 110 | 2.1 | 631 | 31.0 | 3,609 | 36.9 | 6,342 | 18.5 |
| Other terminal | 510 | 3.0 | --- | --- | 163 | 8.0 | 291 | 3.0 | 964 | 2.8 |
| Total | 17,241 | 100.0 | 5,262 | 100.0 | 2,039 | 100.0 | 9,784 | 100.0 | 34,326 | 100.0 |

an additional volume of 5,884 carlots of direct receipts. Wholesale sales to independent grocers were about 24 per cent, sales to institutions were 14 per cent and the remaining outlets grouped under "other buyers" handled 30 per cent (Table XV).[7] A significant difference did exist between outlets at the .05 level but there was no significant difference between cities (Table XXII, Appendix B).

Memphis wholesalers reported the largest volume, 2,713 carlots or 46 per cent of their total volume, as sales to chains, probably because of chains which had organized voluntarily but had no produce division incorporated in the business. The Knoxville wholesale firms reported the smallest volume of sales to chains (12 per cent) of any market reporting (Table XV). The major chains in Knoxville have their own produce divisions and buy primarily from shipping points.

A relatively large volume of sales now being made to chains by independent wholesalers may not continue to be an outlet once a produce division is incorporated in the wholesale buying of fresh fruits and vegetables by these firms.

## VI. SERVICE PERFORMED

The five major services performed by wholesalers were: suggest retail prices, extend credit, train produce personnel, assist with mer-

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[7]The carlot volume listed under outlets will not correspond with volume of receipts. The percentage reported by wholesalers as sales to chains plus direct receipts reported by chains is greater than total receipts reported by chains because two corporate chains in Tennessee would not disclose information as to volume of receipts.

TABLE XV

WHOLESALERS' CARLOT SALES OF FRESH FRUITS AND VEGETABLES, BY TYPE OF OUTLET, IN CHATTANOOGA, KNOXVILLE, MEMPHIS, NASHVILLE, AND TRI-CITIES AREA, TENNESSEE, 1959

| Outlet | Chattanooga | | Knoxville | | Memphis | | Nashville | | Tri-Cities | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Per cent | No. | Per cent | No. | Per cent | No. | Per cent | No. | Per cent | No. | Per cent |
| Retailers: | | | | | | | | | | | | |
| Corporate chains | 1,194 | 33.1 | 425 | 8.5 | 2,043 | 34.4 | 1,481 | 22.8 | 776 | 22.6 | 5,919 | 24.2 |
| Voluntary chains | 640 | 17.7 | 172 | 3.4 | 670 | 11.3 | 337 | 5.2 | 30 | .9 | 1,849 | 7.5 |
| Independents | 422 | 11.7 | 1,843 | 36.8 | 918 | 15.3 | 1,119 | 17.3 | 1,522 | 44.3 | 5,824 | 23.8 |
| Institutions | 342 | 9.5 | 329 | 6.6 | 932 | 15.8 | 1,145 | 17.7 | 686 | 19.9 | 3,434 | 14.0 |
| Other buyers | 1,009 | 28.0 | 2,253 | 44.7 | 1,376 | 23.2 | 2,404 | 37.0 | 423 | 12.3 | 7,465 | 30.5 |
| Total | 3,607 | 100.0 | 5,022 | 100.0 | 5,939 | 100.0 | 6,486 | 100.0 | 3,437 | 100.0 | 24,491 | 100.0 |

chandising, and delivery. The extent to which these services were provided depended on the size of firm and management's foresight as to what was required to compete successfully, keeping in mind that the firm was profit motivated. Dealers in each market area more nearly followed the policies set forth by larger firms in their particular area, with distant marketing areas having very little influence on outside operations. This helped define the different markets and indicated that each major market area in Tennessee would be at different stages of market structure as the population increased. Credit and delivery services were used by most firms in all markets. Memphis had the largest per cent of firms extending services in pricing and merchandising. Firms provided these services to compete in the market, either adding or discontinuing services as changes required. This is one method the firms used to differentiate services and build customer loyalty, thus increasing their competitive position. Memphis provided a larger percentage of all services, with the exception of credit, of any market (Table XVI). Managers were required to be alert for changes in services so they could quickly adjust their operation.

Independent wholesalers had a wide range in gross margins, ranging from 4 to 25 per cent of gross sales, with an average of 14 per cent for all markets, the average for each market area ranging from 10 to 22 per cent. The gross margin of chains ranged from 12 to 35 per cent, with an average of 25 per cent. Small independent wholesalers indicated that keen management was necessary to stay in business and that they were gradually being "squeezed" out because of price competition from larger firms. About 60 per cent of the independent firms reported that their gross margin was

TABLE XVI

TYPE AND NUMBER OF SERVICES PERFORMED BY WHOLESALERS IN CHATTANOOGA, KNOXVILLE, MEMPHIS, NASHVILLE, AND TRI-CITIES AREA, JULY, 1960

| Service performed | Chattanooga | | Knoxville | | Memphis | | Nashville | | Tri-Cities | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Per cent | No. | Per cent | No. | Per cent | No. | Per cent | No. | Per cent |
| Suggest retail price | 4 | 21.0 | 1 | 5.2 | 7 | 41.1 | 4 | 16.0 | 3 | 20.0 |
| Extend credit | 18 | 95.7 | 25 | 83.3 | 15 | 88.2 | 24 | 96.0 | 11 | 73.3 |
| Assist with merchandising | 5 | 26.3 | 2 | 6.6 | 7 | 41.1 | 3 | 12.0 | 4 | 26.6 |
| Delivery | 16 | 84.2 | 12 | 40.0 | 16 | 94.1 | 22 | 88.0 | 13 | 86.6 |

determined by what the market would allow, with the market price being influenced by larger firms.

## VII. DIFFICULTY OF ENTRY

Very few firms were entering the industry and thirteen firms indicated that future plans were to leave the business if chain groups continued to grow. Only 15 per cent of the firms had been in business less than ten years, with about twenty-two years being the average for all firms. To enter the wholesale fresh fruit and vegetable industry would require considerable investment outlay in equipment, with considerable risk from loss in handling a highly perishable product. Chains and cooperative groups spread the risk over more units of output, making credit easier to obtain. Small firms would also be very vulnerable in the short-run because of insufficient capital and the inability to sustain loss. The use of private brands by chains and large wholesalers to give product differentiation also placed them in a more favorable position in the dry grocery business and is likely to be used in the fresh fruit and vegetable market.

CHAPTER IV

# MARKET STRUCTURE CHANGE AND IMPLICATION FOR PRODUCERS, WHOLESALE AGENCIES, AND SHIPPING POINT MARKETING FIRMS

## I. CHANGE IN STRUCTURE

### Type of Operation and Years of Service

Only 20 per cent of the firms that had been in business for less than ten years did over a hundred carlot volume annually. Commodity specialists had the highest average number of years (23) in business of any wholesalers in the sample. Carlot receivers were second, with an average of 22 years. Jobbers, who usually handle a smaller volume of produce than other types of wholesalers, had an average of 16 years in business, the lowest of any. Since jobbers usually operated on a smaller scale it was easier for them to enter the business, but because they were unable to realize the economies of scale from which larger firms were benefiting, they did not stay in as long.

Chain stores had a range of 8 to 65 years in which they had been buying produce, with an average of about 25 years (Table XVII). The growth of voluntary and cooperative groups in recent years accounts for a large part of the spread in range for chain stores.

### Changes in Services Performed

The struggle is not between chains and independent wholesalers, but between large and small organizations. Large organizations had made changes in services performed and retailers had integrated wholesaling to profit from economies of scale. Twenty-three firms reported a change in delivery

TABLE XVII

AVERAGE YEARS SERVICE AND RANGE FOR 106 WHOLESALE FIRMS BUYING PRODUCE IN TENNESSEE, 1959

| Type of firm | No. of dealers | Average years | Range | |
|---|---|---|---|---|
| | | | Minimum | Maximum |
| Carlot receiver | 51 | 22.5 | 1 | 82 |
| Commodity specialist | 25 | 23.0 | 5 | 101 |
| Jobber | 18 | 16.0 | 2 | 45 |
| Chain warehouse | 12 | 24.7 | 8 | 65 |

service with fifteen firms, or 65 per cent, reporting more delivery service, and eight, or 35 per cent, reporting less. Fifteen of the 106 firms reported an increase in prepackaging of fresh fruits and vegetables. Eleven firms reported an increase in services, such as merchandising, advertising, pricing assistance, and refrigerated transportation.

Forty-nine firms reported a change of some type in services performed during the past twenty years. Managers of firms making changes were attempting to compete with chains and larger firms, whereas small firms were unable to make changes in many instances because of capital shortage.

Future Changes Planned

Future changes by wholesalers of fresh fruits and vegetables will have a great influence on future structure and types of firms that can exist. The changes planned by 115 wholesalers reporting did not appear very encouraging for small firms. Thirteen of the small firms planned to go out of business and eleven others indicated that the future looked very bad. Four wholesalers and three chains planned to make warehouse or facility improvements. Five of the thirteen chains planned to expand prepackaging, while only six wholesalers indicated a change in prepackaging or other services.

A few wholesalers and one chain representative made general statements that more prepackaging would be done at the shipping point. Three wholesalers indicated that more assistance would be given to retailers to help them survive the pressure from large organizations.

Integration by Chain Groceries

Starting in the late thirties and continuing after World War II,

chain organizations consolidated to have fewer and larger stores. Originally chains aimed at collecting retail units under one management to secure price advantage of large volume purchasing. Instead of providing services like the neighborhood grocery, they aimed for lower cost by cash-and-carry.[1] The process of collecting more and more retail units under one management is known as horizontal integration. As time moved on, chains have not been satisfied with this one type of integration; they have also followed another course of action known as vertical integration which is the control by a single firm of two or more stages in the chain of production, processing, and distribution. Chains have instituted this by combining the retailing and wholesaling functions. As a result of vertical integration by corporate chains, independent wholesalers and retailers have formed cooperative groups to meet competition. These steps have made it even more difficult for unaffiliated retailers and wholesalers to stay in business, and their future looks hazardous.

Several wholesalers were contacted that supplied dry groceries to voluntary or cooperative groups, which would include practically all retailers in the metropolitan areas of the markets studied. No produce was being handled by these twenty-two wholesalers at the time of this study, but a change in policy of these firms would mean a considerable expansion in direct buying, which would decrease the number of independent wholesalers.

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[1]Richard L. Kohls, Marketing of Agricultural Products (New York: The MacMillan Company, 1955), p. 374.

Changes in Marketing Channels

During the past twenty years, forty-four firms reported a change in source of supply, with 59 per cent of these firms buying more fresh fruits and vegetables direct from shipping point, thus by-passing auctions and terminal markets. Forty-one per cent of the firms reporting a change had bought more through buying brokers, or bought as pooled cars to get volume discounts. All corporate chains bought some items direct from shipping point, although in some instances specialty items were bought from wholesalers in the city. Chains bought direct from shipping point so they could get large quantities of a uniform quality of produce.

Many changes in technology made the shift to more direct buying possible. Some of these improved techniques were: improved refrigeration on motor trucks, improved highways, better communications, development of grade standards and inspection service at shipping point. Small chains and supermarkets can now buy direct, using motor transportation, and send the produce direct to their stores. Merchant wholesalers can also make greater use of direct buying by using motor transportation.

## II. IMPLICATION OF CHANGES FOR PRODUCERS AND MARKETING FIRMS

Producers

With the increased volume of direct buying and chain store business, producers will be required to reorganize production and marketing practices to change the size of lot available to the buyer. It will become more difficult to dispose of small lots of poor quality produce. The volume and quality that a producer can supply will have a great influence as to whether

there will be a market for his products in the future.

One argument against decentralized marketing or direct buying is that no competition will exist between buyers. If small producers fail to pool their products this might be true, but would still be questionable with modern communications and marketing news. Improvements would need to be made in marketing news and shipping point inspection, as indicated by firms buying direct, but if an effective system is used, greater efficiency in marketing would be realized, thus eliminating some of the middlemen.

The process of decentralization has been accelerated by developments in chain store wholesaling and retailing. The wholesale gross margin was about 14 per cent of the selling price. To this cost was often added various cartage charges, which would not be an expense on shipments direct from shipping point to chain warehouses. The economies achieved by direct marketing at the producer end would be somewhat similar to those realized from combining retailing and wholesaling. The savings would result from eliminating the charges and commissions of middlemen.[2]

Wholesale Markets

From all indications the share of total volume to be handled by independent wholesalers will continue to decline as direct buying by chains increases. The limits to which this decline will go depends on how competitive wholesalers will remain as changes take place. If smaller chains find that they can obtain supplies from the wholesalers at prices which allow them to compete in the retail market, they will most likely continue to

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[2]Shepherd, op. cit., p. 86.

patronize the wholesaler. Institutions, restaurants, and unaffiliated retailers are expected to remain outlets for wholesalers. Specialty firms are also needed to supply chains and other wholesalers with produce which cannot be economically prepackaged at shipping point.

Many wholesale firms have realized the "squeeze" being placed on them as a result of direct buying.

Shipping Point Firms

As direct buying increases and other structural changes take place, shipping point firms will become more essential toward providing the type of products and services required by decentralized marketing. Many firms believe that more prepackaging at shipping point will be required. For example, it has been found through marketing research that potatoes can be more economically prepackaged at shipping point.[3]

The changing structure seems to indicate the need for emphasis on large packing and shipping operations, to meet the specifications of the chain store market. Shippers or packers may need to locate near the producers, depending on the size of producers in an area. Volume control will become important since there will be fewer independent customers, consequently less total volume to this group. Therefore the withdrawal of a carlot going to these markets which are not chains will become more pronounced.

Changes in supply may cause larger price changes than formerly.

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3U. S. Department of Agriculture, Agriculture Marketing Service, Prepackaging, Marketing Research Report No. 401 (Washington: Government Printing Office, June, 1960), p. 20.

It will also be more difficult to clean up supplies in a market because of fewer buyers. These will be problems shippers and packers must consider.

# CHAPTER V

## APPRAISAL OF ALTERNATIVE METHODS OF IMPROVING BARGAINING POWER OF GROWERS

### I. EXISTING MARKETING ORGANIZATIONS

The majority of marketing organizations or groups in Tennessee on the buyers' side were corporate chains and voluntary or cooperative groups which had organized to place themselves in a better position to realize greater economies of buying and merchandising. However, many wholesalers were not organized to give them economies of scale. Small producers were faced with the problem of losing their position in the market because of the large lots being required by chain store buyers. Chain stores indicated that they would pay higher prices to get high quality produce in large volume from one producer. One of the major chains in Memphis wanted to deal with one individual in buying produce, and suggested that small farmers should join together and pool their products.

The Tennessee farmer generally has not made the necessary changes to meet competition in marketing his products. Most farmers still bring their produce to market as individuals to deal with large chain organizations and wholesalers. This puts them in an unfavorable position because individually they can only supply a small part of the chains' needs. The large buyers know other producers will have products to sell, which gives them many sources of supply. In some instances large firms have bought just enough supplies from producers in the morning to meet their needs for the day; then later in the afternoon they bought the remainder of the producers' supplies at reduced prices. Producers were unable to bargain

because of their highly perishable products for which they had no storage facilities.

The number of producers in each market area of Tennessee was relatively large and the number of wholesale buyers was small. For example five hundred farmers used the Western Avenue Market in 1958, while only thirty-three wholesale firms handled the wholesale receipts of fresh fruits and vegetables in Knoxville.[1]

The strawberry growers in Tennessee have taken steps to improve their competitive position in the market by organizing grower cooperatives. The Madison County Strawberry Growers Association, Kenton Strawberry Growers Association, and Portland Strawberry Growers Association have been working rather effectively. Although we do have these marketing associations, generally the present organizations on the sellers' side can be described as a group of large numbers, whereas the buyers' side consists of only a few.

## II. ALTERNATIVE MARKET ORGANIZATIONS

Alternative marketing organizations have arisen as a result of economic developments in the country where farmers are small atomistic producers operating in an economy of large scale industry and monopoly control. Theoretically a firm of optimum size, when performing the function of buying and selling in a perfectly competitive system of markets, has no incentive to become vertically integrated. Most likely it would

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[1]William E. Goble, The Knoxville Wholesale and Retail Produce Markets, Bulletin 315 (Knoxville: Tennessee Agricultural Experiment Station, July, 1960), pp. 5-21.

avoid integration because cost would be increased and flexibility decreased. Integration in a theoretical world is brought about by price, which coordinates the activities of buyers and sellers: farmers will produce the right products at the right time to meet consumers demands as reflected through the marketing system.[2]

The farmer today finds himself facing a position far from the perfectly competitive market system. Imperfect markets are the rule rather than the exception because knowledge is poor and buyers are few. These conditions, along with future uncertainties of price, and the desire to reduce cost, have given farmers and wholesalers alike the incentive to integrate vertically in the fresh fruit and vegetable industry. Seven hundred fifty-six marketing cooperatives were owned and operated by fresh fruit and vegetable producers in the United States in 1957.[3]

Vertical integration as practiced today by some farmers and wholesalers is not new. Both industry and agriculture have integrated to gain efficiency of operations impossible to realize under conditions of independent operations of separate processes. Integration gives advantages to small farmers through specialization and larger operations.[4] Increased marketing cost and price fluctuations have encouraged vertical integration.

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[2]Eleanor M. Birch, Norma R. Collins, and Williard F. Mueller, Grower-Processor Integration, Bulletin 768 (Berkley: California Agricultural Experiment Station, October, 1959), p. 6.

[3]U. S. Bureau of the Census, Statistical Abstract of the United States: 1959 (Washington: Government Printing Office, 1959), Table 850, p. 643.

[4]Stephen L. McDonald, "The Integration Process and Agricultural Programs," Journal of Farm Economics, XXXV (August, 1953), 57.

Cooperatives

A marketing cooperative is an aggregate of individual producers or economic units who pool for joint marketing the products which they produce independently. The cooperative's objective is to maximize the profits of its members although it does not make any profit itself. Cooperatives take over the sales jobs and marketing functions previously performed by individuals (or firms).

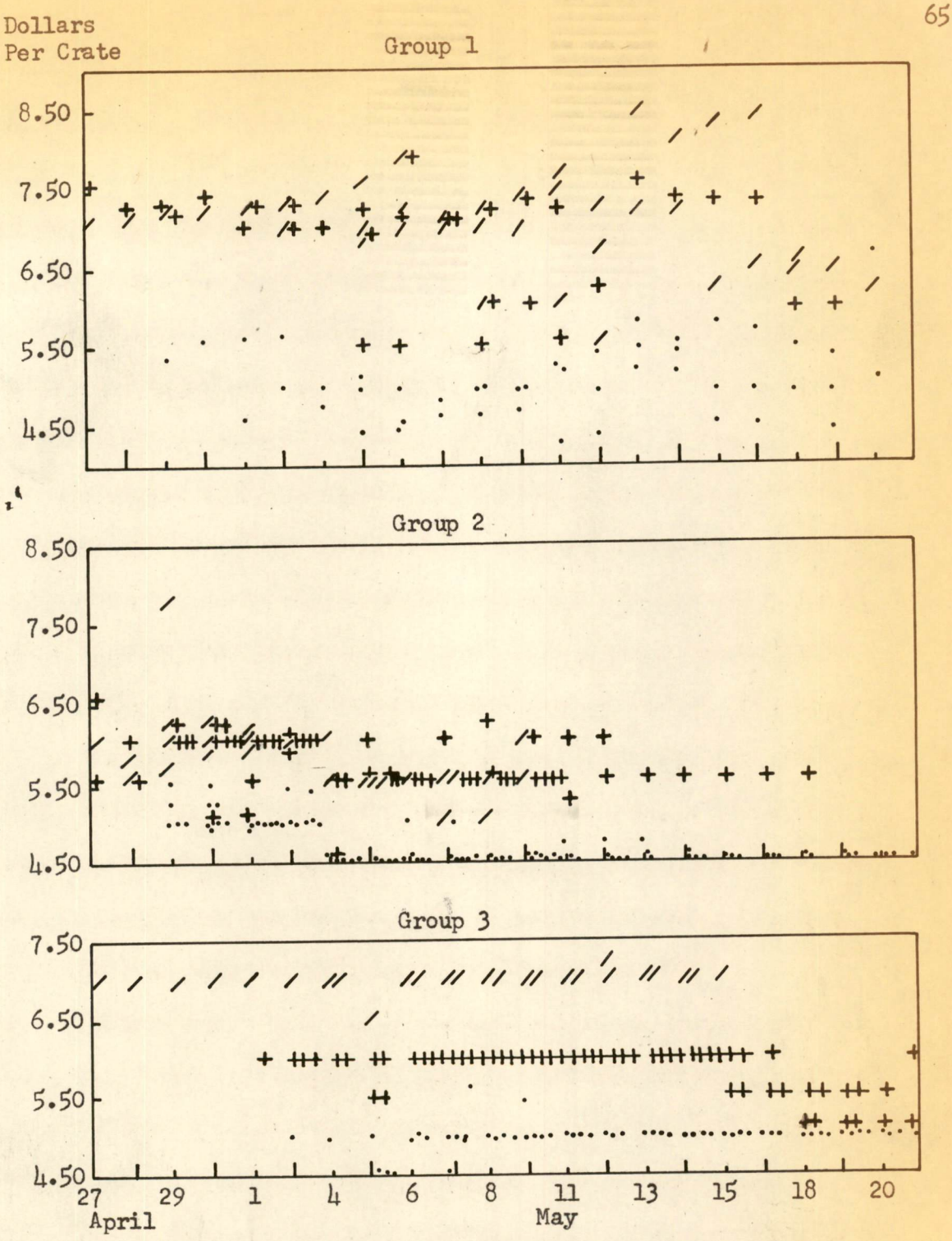
The fresh fruit and vegetable marketing cooperatives can and do have an effect on marketing cost.[5] The following advantages emphasize their strength: (1) single management controls a number of operational units in the marketing process, (2) less time is required to market the products, (3) atomistic farmers benefit from large operations, realizing greater economies of scale in marketing, and (4) cooperatives may be able to manipulate price by having freedom of price movement. Previous research at the Tennessee Agricultural Experiment Station shows that out of three market groups, the one which was made up by cooperative groups received slightly higher prices for strawberries (Figure 8).

When one cooperative sells to one large buyer a bilateral monopoly exists, and when cooperatives are organized to supply a few buyers an approximation of bilateral-oligopoly may exist. Prices may fall anywhere within rather wide limits, with the buyers being guided by the marginal receipts from added purchases. The sellers will be guided by their marginal cost of added production, and prices will be determined by bargaining.

The disadvantages of marketing cooperatives are not clear but the

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[5]Werner Z. Hirsch, "Marketing Agreements and Cooperative Marketing," Journal of Farm Economics, XXXII (May, 1950), 221.




Note: Each symbol represents the price paid by one firm on the day on which listed.

Figure 8. Price pattern of firms when stratified according to type ownership, grade and seasonality. (From University of Tennessee Unpublished Master's thesis by A. W. Woodard.)

possibility exists that consumers will not benefit from this type of operation if cooperatives are able to manipulate prices in a way consistent with the profit motive. Consumers in the past have been concerned primarily with low prices, giving very little thought to quality, but in our changing society more emphasis is being placed on quality, which may favor cooperatives since this is part of their approach to improving the marketing system. There are also many indications that marketing cooperatives have lowered marketing costs, with savings being diffused throughout the economy, thus reflecting lower cost to consumers. Another factor sometimes considered to be a disadvantage of cooperatives is the control of the members output. They may be somewhat limited in their operations as to output and must meet specified grades and standards. Even though these things are considered unfavorable, the advantages seem to outweigh the disadvantages and many marketing cooperatives are in operation today. There is some question as to how much benefit cooperatives can be to the small fruit and vegetable growers in Tennessee because Tennessee producers provided only a small share of national or regional volume (Table XVIII). For cooperatives to give long-run benefits in Tennessee it would require strict adherence to prices of other supply areas because the market for any city is not limited to one supply area. A short-run advantage is almost sure to be profitable individually, since Tennessee farmers are providing a very small volume to large wholesale operators, and cooperative selling should give immediate results because it would control quality and quantity, which the large buyer desires. However, if all producers in the United States were members of cooperatives, then very little benefit would be likely to be realized by small producers.

TABLE XVIII

PRODUCTION OF FRUIT AND VEGETABLE CROPS, TENNESSEE
PER CENT OF UNITED STATES, 1957-58

| Crop | Use[b] | Tennessee per cent of United States production 1957 | 1958 | 1958[a] value to Tennessee growers ($1,000) |
|---|---|---|---|---|
| Apples | F&P | .3 | .5 | $1,380 |
| Beans snap | F | 3.3 | 4.3 | 324 |
| Beans snap | P | 2.4 | 2.7 | 1,740 |
| Cabbage | F&P | 1.8 | 2.9 | 280 |
| Peaches | F&P | .2 | .3 | 432 |
| Pears | F&P | .4 | .5 | 210 |
| Potatoes | F&P | .3 | .2 | 1,432 |
| Strawberries | F&P | 9.5 | 9.4 | 4,190 |
| Sweetpotatoes | | 3.1 | 2.9 | 2,263 |
| Tomatoes | F | .9 | 1.7 | 1,424 |
| Total value | | | | 13,675 |

Source: U. S. Department of Agriculture, Agricultural Statistics: 1959 (Washington: Government Printing Office, 1960), pp. 156-265.

[a]Preliminary

[b]Fresh market and/or processed

Marketing Agreement

Marketing agreements and/or marketing orders were authorized by the Secretary of Agriculture to give the farmer a means of improving his position in the economy by offsetting the market power of handlers and processors. It also assured the marketing association of a definite volume of business. A marketing agreement is a voluntary contract entered into by the Secretary of Agriculture and handlers of a particular commodity. The agreement affects only those who sign it and usually requires a two-third majority for approval before it is placed in effect. A marketing order is an order issued by the Secretary of Agriculture which makes the terms of marketing programs effective upon all handlers in the industry, whether they sign the agreement or not.

Marketing agreements are integrated entities managed by control boards to increase profit of its members. In order to increase profits, management will differentiate its commodities and manipulate the amount shipped. These processes are carried out by regulating sizes and grades as well as flow of goods over time and space. The quantity of any one grade or size may be changed for any period of time or for the entire season. The elasticities of demand in the different markets must be known, before manipulation of goods between markets can be made profitable. If demand is relatively inelastic in a market, small quantities can be withdrawn, bringing about a slight increase in price. This amount can then be added to the more elastic market bringing about only a slight decrease in price, therefore giving a greater total dollar return.[6] If

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[6]Kohls, op. cit., p. 135.

curtailments in shipments were made of a specified grade or size it would have to be faced with an inelastic demand to maximize profits. Specific information was seldom available on elasticities, but limited research had been done. Table XIX illustrates how elasticity of demand changed throughout the season for fresh strawberries. The elasticity of demand changed from "highly elastic" during the first part of the season to "less elastic" then back to "highly elastic." During the periods of inelastic demand a reduction could have been made in the amount sold to increase total revenue.

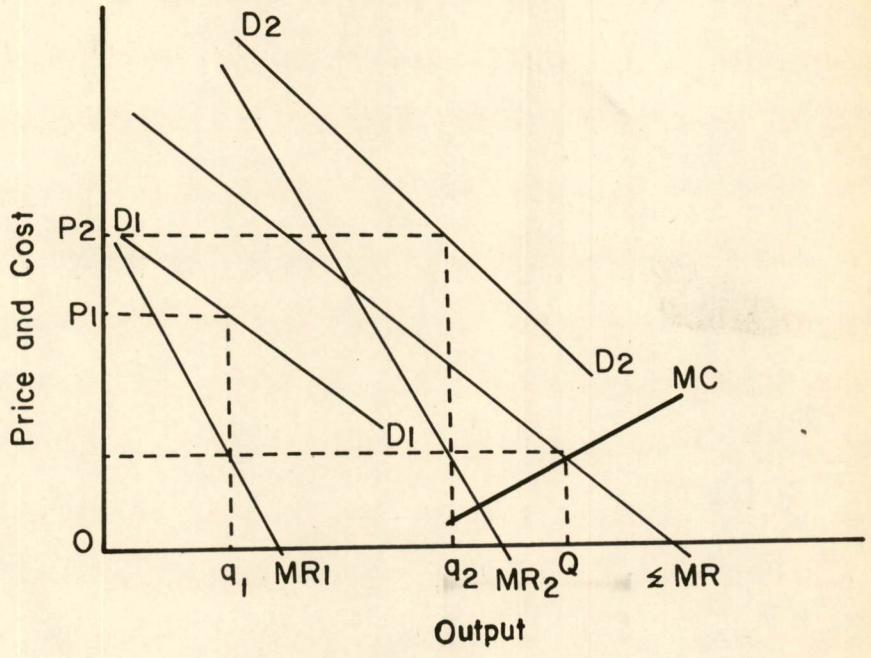
Marketing agreements also involve the theory of two price systems or price discrimination. A graphical representation is shown in Figure 9. The processor market may be used as a diversion market for fresh fruits and vegetables, making allocations to each based on elasticities of demand. If the demand is inelastic for a particular grade in the fresh market and elastic in the processor market, shifts can be made to the processor market to increase total revenue. The demand for any given grade is affected more or less by quantities of other grades available on the market. Consideration must be given to elasticity of demand for a particular quantity and the effect of a given quantity reduction in supply upon price per unit of other grades. Suppose the control board is practicing price discrimination between classes of consumers, discriminating against one group of consumers by restricting high priced grades and sizes. The demand curves would then be similar to Figure 9, where two separate market demand curves exist: $D_1\ D_1$ the demand curve for low grade produce and $D_2\ D_2$ the demand curve for a high grade product. The control board would manipulate demand by decreasing the high priced grade $D_2\ D_2$, which is less elastic than the lower grade represented by $D_1\ D_1$. If quantity is decreased in the less

TABLE XIX

AVERAGE WEEKLY IN-FIELD ELASTICITY OF DEMAND WITH RESPECT TO PRICE FOR FRESH LOUISIANA STRAWBERRIES (1924-40)

| Week of season | In-field demand elasticity with respect to price (at centroid) |
|---|---|
| 1 | -3.25 |
| 2 | -2.64 |
| 3 | -2.68 |
| 4 | -2.30 |
| 5 | -2.00 |
| 6 | -1.24 |
| 7 | -2.30 |

Source: Werner Z. Hirsch, "Marketing Agreements and Cooperative Marketing," Journal of Farm Economics, XXXII (May, 1950), 219.




MC – Marginal Cost
MR – Marginal Revenue
≤MR – Summation Marginal Revenue
D – Demand

Figure 9. Price discrimination.

elastic and shifted to the more elastic, total revenue will be increased by discriminating against consumers buying the higher grades. The marginal revenue ($MR_1$ for the first market and $MR_2$ for the second) determines the amount to be sold. The profit maximizing output for the marketing organization is the summation of the $MR_1$ and $MR_2$ schedules, adding the two quantities at each marginal revenue level. The summation shown as MR represents the relation of combined output in the two markets to marginal receipts. The marginal cost for total output is shown as MC. To maximize profit, allocations are made to each market until marginal receipts are equalized, selling quantity $Oq_1$ in the low grade market and $Oq_2$ in the high grade market, selling at price $OP_1$ and $OP_2$ corresponding to submarkets.[7] Price discrimination through fruit and vegetable marketing agreements have somewhat similar characteristics.

To evaluate marketing agreements, the advantages and disadvantages have been weighed, giving consideration to factors which affect the overall economy. The risk reducing factor is considered to be a great benefit by farmers who enter into these agreements, by coordinating management activities to reduce uncertainty of quality, price, and quantity. Reduction of waste in marketing of fresh fruits and vegetables because of spoilage is another factor in favor of marketing agreements. The control boards also control the spatial factor by not glutting markets. Through marketing agreements farmers can better meet the demand of large chain stores and supermarkets.

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[7]Bain, op. cit., p. 412.

Another possible advantage is the better position an organization has in bargaining for labor. Since industry is organized and competing for labor, outbidding farmers, a need arises for farmers to receive some of these same benefits, higher returns per hour of work and more security by having available labor. The benefit going to the consumer is another very important function of marketing agreements in that the savings in marketing cost will readily be reflected in consumer prices because of the degree of competition that exists in retailing.

The disadvantages of marketing agreements are many and varied, affecting different groups in different ways. Many independent producers resent the controls of binding agreements. Tennessee fresh fruits and vegetables are grown in such small quantities, agreements may not be to the producers' advantage (Table XVIII, page 67). The possibility of overproduction may also exist if more capital is added through easier credit and improved technology is used. If this situation should arise, it would mean lower prices to producers, but consumers would benefit.

Contract Farming

Contract farming is another alternative the fresh fruit and vegetable producer may use to reduce risk, but once he enters into a contract his possibilities of selling on a higher market to maximize profits are lost. Even though processors contract produce, chain stores and large wholesalers would probably lean more toward buying from cooperatives.

By entering into a contract, farmers can receive capital and technical advice from the firms they are dealing with. If a farmer agrees to a contract he can expect assistance in obtaining information as to best

varieties, as well as advice on packing and grading, so that he is able to produce the type of product the consumer prefers. The farmer is also more sure of a stable income since the price and other marketing conditions will be agreed on.

Certain inconveniences will also arise from contracts. The marketing firm may not be adequately equipped to give the proper advice, and less independence by the producer will be realized. The producer may also lose opportunities to expand by being bound by a contract; he limits himself to how much he can make when entering risk reducing agreements. Therefore all members should thoroughly understand all parts of the contract, making sure it will be beneficial to the producer, so that unfair advantage will not be taken by the large firm.

# CHAPTER VI

## SUMMARY AND CONCLUSIONS

Despite the importance of fresh fruits and vegetables as a part of the daily food supply, very little is known about the wholesale market structure and the magnitude of changes that have been taking place in Tennessee. This thesis has been concerned with the present wholesale fresh fruit and vegetable marketing system in Chattanooga, Knoxville, Memphis, Nashville, and Tri-Cities Area in Tennessee, the impacts of changes in market structure on wholesale agencies, shipping point marketing firms, and the marketing alternatives for producers as future changes take place.

Data used in the analysis were collected from fresh fruit and vegetable wholesalers and chain store operators in Chattanooga, Knoxville, Memphis, Nashville, and Tri-Cities Area, Tennessee. One hundred six merchant wholesalers and thirteen chain store groups provided information on their operations.

The majority of wholesale fresh fruit and vegetable market facilities were poorly organized and poorly maintained for most efficient operation. This was evident by lack of rail spurs and loading docks at many establishments. The absence of adequate planning and improvements to handle the increased volume of produce required by normal population growth was very noticeable. The markets have grown with very little consideration for marketing efficiency from the standpoint of both producers and customers.

The primary types of fresh fruit and vegetable wholesalers operating in each city were carlot receivers, commodity specialists, jobbers, and

chain store groups. The carlot receivers handled more fresh fruit and vegetables than any other group, accounting for 50 per cent of the total volume handled by all groups of wholesalers. They were followed by the chain store group which accounted for 28 per cent of the total volume handled. There was no significant difference between cities and volume of business by type of wholesaler. The distribution of products between city, metropolitan area, and outside the metropolitan area was not statistically significant at the .05 level in any of the trade areas.

The number of firms handling fresh fruits and vegetables were fewer in Memphis where the largest total volume (10,927 carlots) was handled. Their average volume was 546 carlots, 3 times greater than the average volume handled by wholesale firms in Chattanooga, which had the lowest volume (185 carlots per wholesaler) of any trade area. The Tennessee markets consisted of a relatively small number of wholesale buyers of fresh produce, with 34 per cent of them selling under fifty carlots annually and 53 per cent selling from one to one hundred carlots. In Memphis only six of the seventeen wholesalers did under one hundred carlots of business per year. As market areas grew, large firms and chain groups seemed to thrive and small wholesale buyers were forced out, thus changing the market structure. Exit of firms is expected to continue, with thirteen firms planning to go out of business, and eleven others indicating that the future looks very bad.

Direct volume buying from shipping point has greatly influenced the market structure. About 73 per cent of the volume handled by firms contacted was bought direct from shipping point. Jobbers handled the smallest per cent of any wholesale group, accounting for only 4 per cent of the total.

During the past twenty years, forty-four firms reported a change in source of supply, with 59 per cent of these firms buying more produce direct from shipping point. Improved truck transportation and refrigeration has enhanced this method of buying. A significant difference at the .05 level was found between sources of supply used by different types of wholesalers. Independent fresh fruit and vegetable wholesalers made 32 per cent of their sales to chain stores, 25 per cent to independent grocers, 14 per cent to institutions, and 30 per cent to other buyers. As direct buying continues to increase, the volume which independent wholesalers can sell to chain stores is expected to decrease, which will force a small number of independent wholesalers out of business, as previously indicated. The number of wholesalers may also be decreased by independent retailers organizing cooperative buying groups and changing to direct buying, thus by-passing the independent wholesaler. Twenty-two cooperatives already in operation were handling dry groceries and, with a change in the buying policies of these groups to include produce, merchant wholesalers' volume would be greatly reduced.

A wide range in gross margins was found to exist between both merchant wholesalers and chain groups. Merchant wholesalers' gross margins ranged from 4 to 25 per cent of sales with the average being 14 per cent. The gross margins of chains ranged from 12 to 35 per cent with an average of 25 per cent. About 60 per cent of the firms based their gross margins on what the market would allow, with the market price being influenced by the larger firms. This indicates that large firms have a great influence on the future of the industry.

The wholesale market was divided in two sub-groups, chain groups, and merchant wholesalers. The chain sub-group seemed to place the retailing of fresh produce in an oligopolistic situation whereas the atomistic producers were facing fewer and larger buyers, placing them in more of an oligopsony. The large firms also had a significant influence on the pricing policy of small merchant wholesalers since small firms were selling to retail competitors of chain groups.

Very little new entry was evident in the wholesale fresh fruit and vegetable market, with twenty-two years ownership being the average for all firms in the produce business. About 80 per cent of the firms that had been in business less than ten years were small and handled less than one hundred carlots per year. The larger firms were providing new innovations and services to attract customers, thus making it very difficult for small firms to enter or remain in the business.

The few changes in market structure pointed out in this thesis are by no means all that have taken place during the past twenty years. However, it is believed these changes require producers to adjust their marketing system to meet the demands of a dynamic wholesale fruit and vegetable industry. It is evident that larger quantities and a higher quality of produce must be offered for sale if producers are to sell their produce to the fast growing chain store groups. With many small firms planning to leave the wholesale market and the forming of produce divisions by voluntary cooperative groups already in the dry grocery business, the producer is being forced to sell to fewer firms.

The producers have available alternatives in that marketing cooperatives can be formed to do the marketing job previously performed by the

individual producers. Also marketing agreements and contracts can be sought by individual producers which tend to give stability of marketing. The producer must supply commodities in the quantity and quality desired by the wholesaler if this remains the major outlet for his production.

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# APPENDICES

# APPENDIX A

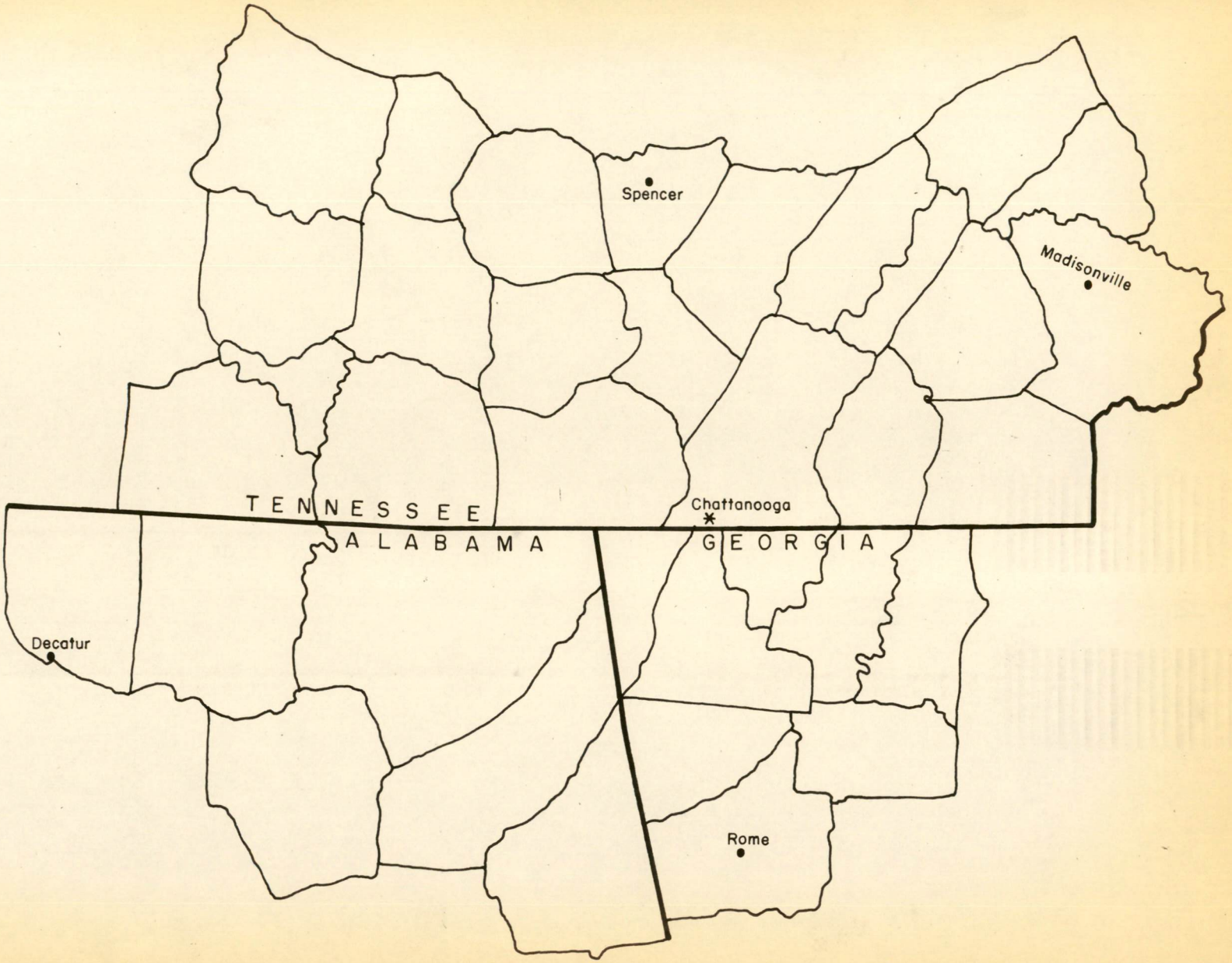



Figure 10. Wholesale trade area for fresh fruits and vegetables from the Chattanooga, Tennessee, markets, July, 1960.

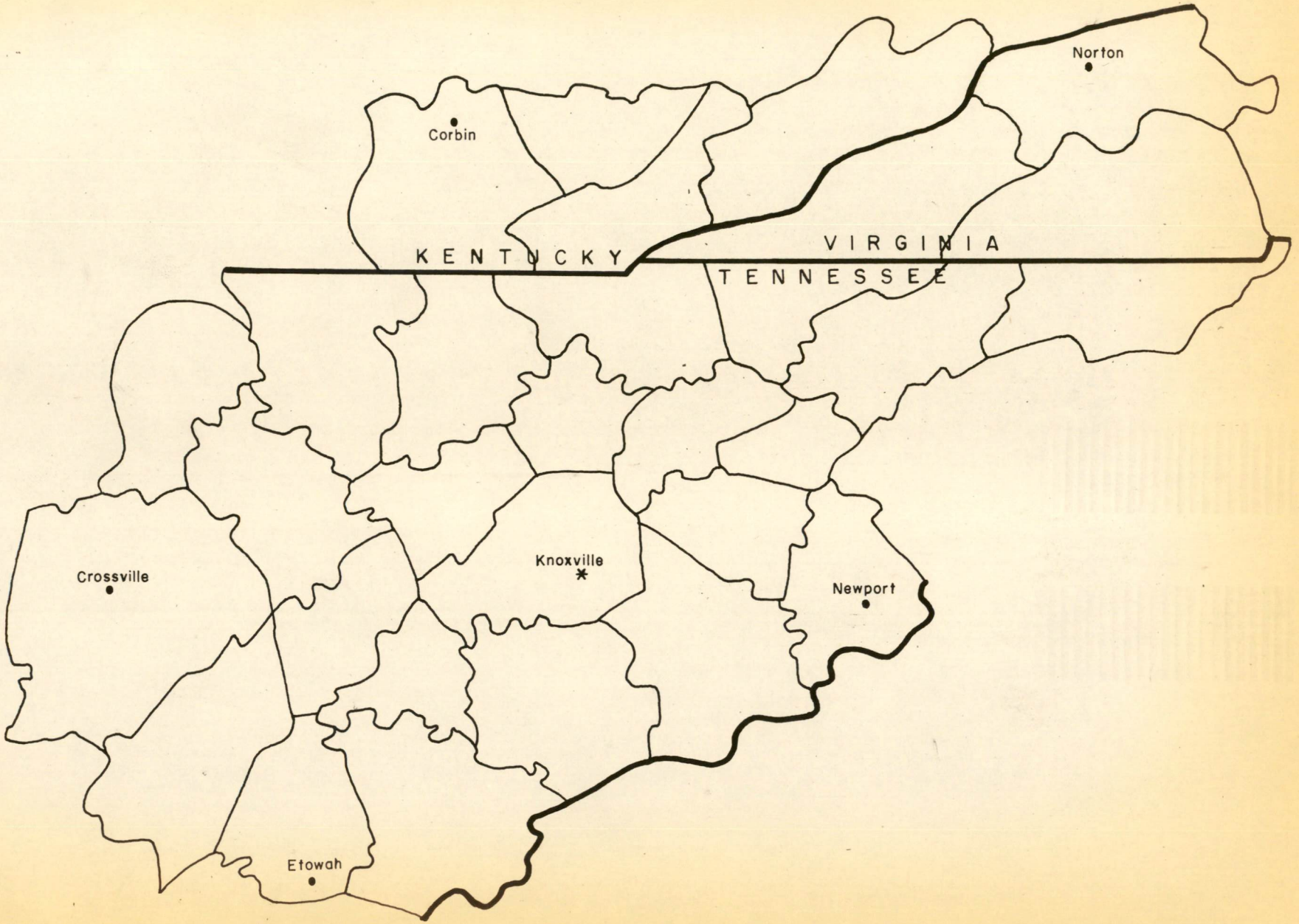



Figure 11. Wholesale trade area for fresh fruits and vegetables from the Knoxville, Tennessee, markets, July, 1960.

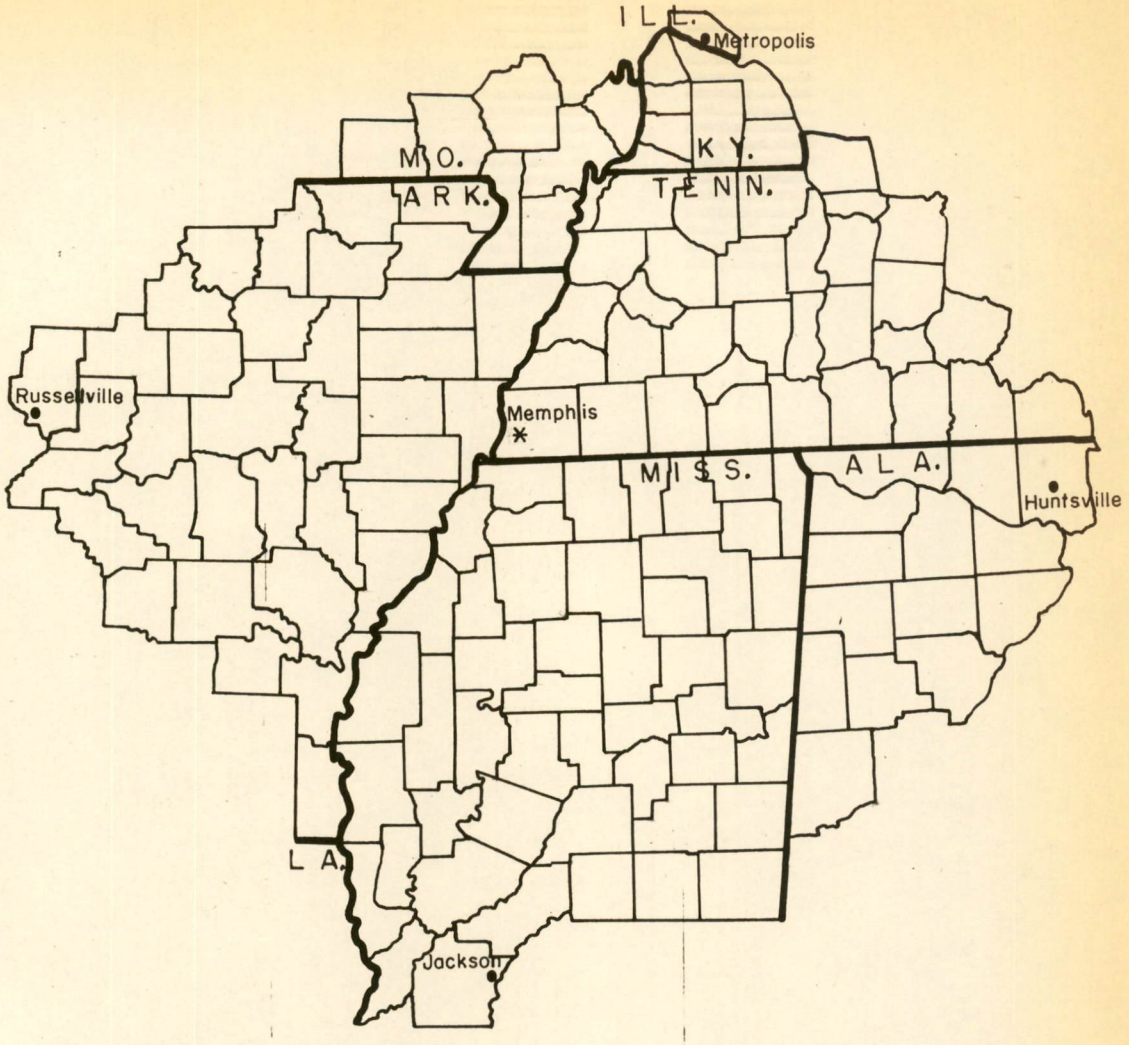



Figure 12. Wholesale trade area for fresh fruits and vegetables from the Memphis, Tennessee, markets, July, 1960.

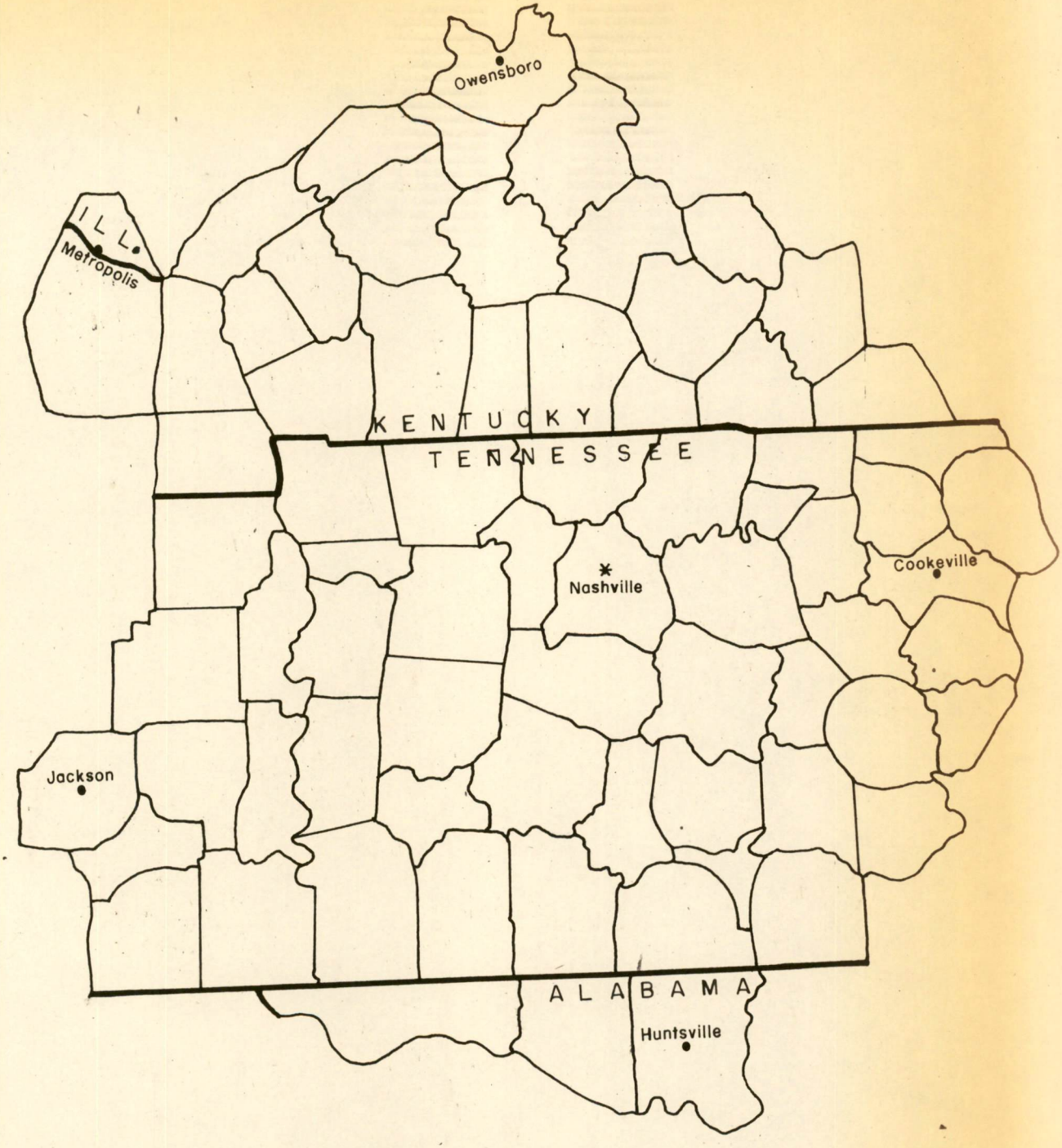



Figure 13. Wholesale trade area for fresh fruits and vegetables from the Nashville, Tennessee, markets, July, 1960.

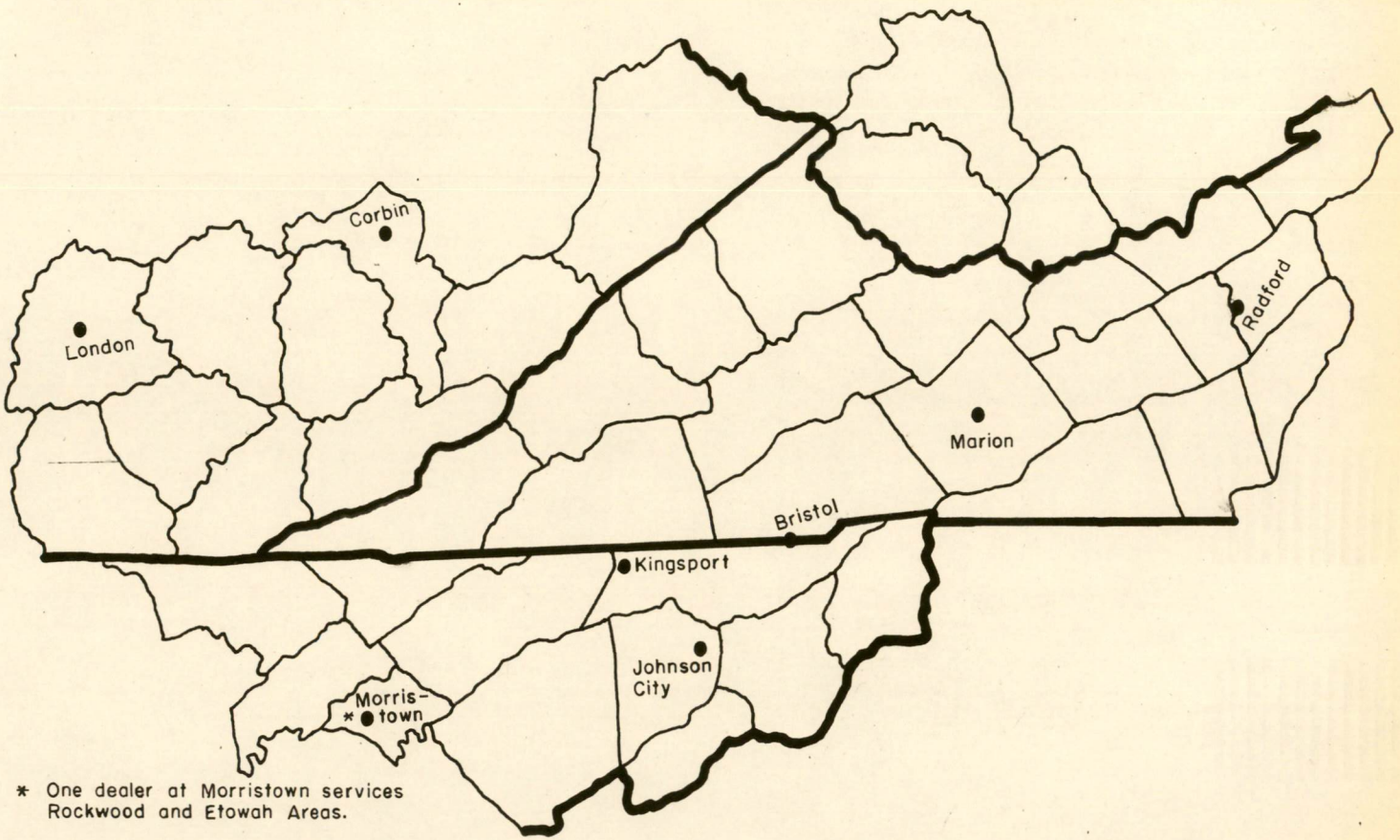



Figure 14. Wholesale trade area for fresh fruits and vegetables from the Tri-Cities Area, Tennessee, markets, July, 1960.

# APPENDIX B

TABLE XX

THE AVERAGE VOLUME OF FRESH FRUITS AND VEGETABLES FOR TYPES OF WHOLESALERS BY CITIES, TENNESSEE, 1959[a]

| Type of wholesaler | Chattanooga | Knoxville | Memphis | Nashville | Tri-Cities[b] |
|---|---|---|---|---|---|
| | | | Carlots | | |
| Carlot receivers | 127 | 206 | 648 | 485 | 608 |
| Commodity spec. | 232 | 125 | 263 | 97 | 99 |
| Jobbers | 253 | --- | 45 | 69 | --- |
| Truck jobbers | 50 | 93 | --- | --- | 25 |
| Chains | 307 | 1,137 | 1,505 | 559 | 295 |
| Total | 969 | 1,561 | 2,481 | 1,210 | 1,027 |

[a]Data were collected for the calendar year ending December, 1959.

[b]Kingsport, Johnson City, Bristol, and Morristown.

TABLE XXI

VOLUME OF FRESH FRUITS AND VEGETABLES DISTRIBUTED TO VARIOUS SECTIONS OF TRADE AREA BY CITIES, TENNESSEE, 1959[a]

| Area of distribution | Chattanooga | Knoxville | Memphis | Nashville | Tri-Cities[b] |
|---|---|---|---|---|---|
| | Volume (carlots)[c] | | | | |
| City | 2,278 | 2,357 | 6,529 | 2,806 | 1,237 |
| Metropolitan | 786 | 416 | 842 | 1,698 | ----- |
| Outside metropolitan | 864 | 4,160 | 3,159 | 2,024 | 3,029 |
| Total | 3,928 | 6,933 | 10,530 | 6,528 | 4,266 |

[a]Data were collected for calendar year ending December, 1959.

[b]Kingsport, Johnson City, Bristol, and Morristown.

[c]Does not include 2,141 carlots of intermarket "second handling."

TABLE XXII

RESULTS OF ANALYSIS OF VARIANCE

| Table | Page No. | Experiment | Source of variation | DF | F |
|---|---|---|---|---|---|
| XV | 49 | Outlets by specified cities | Between outlets | 4,16 | 3.24[a] |
| | | | Between cities | 4,16 | 1.21 |
| XIV | 47 | Source of supply by firms | Between firms | 3,9 | 1.53 |
| | | | Between sources of supply | 3,9 | 4.42[a] |
| XX | 91 | Type of wholesaler by specified cities | Between type of wholesaler | 4,16 | 6.27[b] |
| | | | Between cities | 4,16 | 1.05 |
| XXI | 92 | Trade area by specified cities | Between cities | 4,8 | 1.24 |
| | | | Between area | 2,8 | 4.00 |

[a]Significant at the 0.05 level.

[b]Significant at the 0.01 level.

Note: Based on analysis of variance model, $X_{ij} = \mu + a_i + \beta_j + \epsilon_{ij}$, $i = 1 \ldots a$, $j = 1 \ldots b$, $\epsilon_{ij} = N(0, \sigma)$.