PRICING AND TRADING PRACTICES OF
COUNTRY ELEVATORS IN MISSOURI

A Thesis
Presented to
the Faculty of the Graduate School
The University of Missouri

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Dorwin L. Williams
June 1958

The undersigned, appointed by the Dean of the Graduate Faculty, have
examined a thesis entitled :

PRICING AND TRADING PRACTICES OF COUNTRY
ELEVATORS IN MISSOURI

presented by Dorwin L. Williams

a candidate for the degree of Master of Science

and hereby certify that in their opinion it is worthy of acceptance.

Wendell McKinstry
Frank Miller

J M Boehlman

ACKNOWLEDGMENT

I wish to extend grateful appreciation to Professors J. Wendell McKinsey and David N. Harrington for their guidance in developing this study, and for their assistance in presenting the analysis.

926642

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
Purpose of the Study	3
Scope and Method	4
Definitions of Terms Used	5
Grain Production in Missouri	6
Grain Marketing Developments in Missouri	13
Abstract of Succeeding Chapters	16
II. GRAIN PRICING	18
Sources of Pricing Information	20
Changes in source of pricing information	
since 1946	22
Comparison of Grain Prices Among the Crop	
Reporting Districts in Missouri	22
Relationship of grain prices at the farm	
and at terminal markets	27
III. MARKETING MARGINS FOR COUNTRY GRAIN ELEVATORS.	29
Gross Margins for Fifty-Nine Country Grain	
Elevators in Missouri for Grain Shipped by	
Rail, by Truck, and Sold Locally	30
Comparison of gross margins for large and	
small elevators	35
Comparison of gross margins among the three	
types of firm ownership	36

CHAPTER	PAGE
Comparison of gross margins among the Missouri Crop Reporting Districts	39
Changes in gross margins since 1946	47
IV. METHODS OF SALE FOR COUNTRY GRAIN ELEVATORS . . .	50
Sales Outlets	51
Transportation Methods Used	57
Financing trucked grain shipments	59
V. QUALITY DETERMINATION OF GRAIN	62
Development of Grain Grading	64
Grain Grading Factors	66
Practices in grain sampling	68
Changes in grading practices since 1946 . . .	70
Grain merchandising practices	72
VI. SUMMARY AND CONCLUSIONS	73
BIBLIOGRAPHY	77
APPENDIX	80

LIST OF TABLES

TABLE	PAGE
I. Cash Farm Income from the Sale of Grain, and Livestock and Livestock Products, Missouri Farmers, 1955 and 1956	2
II. Per Cent Each Grain was of Total Grains Produced, Production of Major Grains, and Rank Among All States in Grain Production, Missouri, 1956 . .	7
III. Production of Major Grains by Crop Reporting Districts, Missouri, 1955	8
IV. Ten Year Average Annual Grain Production by Crop Reporting Districts, and the Per Cent of the State's Total Grain that was Produced in Each Crop Reporting District, Missouri, 1946-1955 .	11
V. Per Cent of the State's Total Production of Each Kind of Grain that was Grown in Each Crop Re- porting District, Based on Ten Year's Product- ion, Missouri, 1946-1955	12
VI. A Comparison of Storage Capacity Versus Volume of Grain Handled, by Type of Firm Ownership, for Fifty-nine Country Elevators, Missouri, 1956	15
VII. Sources of Pricing Information and Per Cent of Grain that was Bought Based on Price Informa- tion from Each Source, Fifty-nine Country Elevators, Missouri, 1956	21

TABLE

PAGE

VIII.	Eleven Year Average Price per Bushel Received by Farmers, and Average Price per Bushel Paid at a Terminal Market for Corn, Wheat, Soybeans, and Oats; 1946-1956, Inclusive	23
IX.	Gross Margins of Fifty-nine Country Elevators for Grain Shipped by Rail, Truck, and Sold Locally, Missouri, 1956	31
X.	Comparison of the Gross Margins of Large Ele- vators and Small Elevators, by Kind of Grain, Fifty-nine Country Elevators, Missouri, 1956 .	37
XI.	Gross Margins of Fifty-nine Country Elevators, Grouped According to Type of Firm Ownership, for Rail Shipments, Truck Shipments, and Local Sales of Grain, Missouri, 1956	38
XII.	Gross Margins of Fifty-nine Country Elevators for Grain Shipped by Rail, by Crop Reporting Dis- tricts, Missouri, 1956	42
XIII.	Gross Margins of Fifty-nine Country Elevators for Grain Shipped by Truck, by Crop Reporting Dis- tricts, Missouri, 1956	43
XIV.	Gross Margins of Fifty-nine Country Elevators for Grain Sold Locally; by Crop Reporting Districts, Missouri, 1956	46

TABLE

PAGE

XV.	Changes in Gross Margins on Grain Since 1946, Fifty-nine Country Elevators, Missouri, 1956 .	49
XVI.	Per Cent of Total Volume of Each Kind of Grain Sold, Going Through Each Sales Outlet, Fifty- nine Country Elevators, Missouri 1956	52
XVII.	Per Cent of All Grain Sold That Went Through Each Sales Outlet, Fifty-nine Country Ele- vators, Missouri, 1956	56
XVIII.	Per Cent of Each Kind of Grain Going Through Each Outlet; Per Cent of All Grain Going Through Each Outlet; and the Per Cent Each Grain was of Total Volume of All Grain Sold, Fifty-nine Country Elevators, Missouri, 1956 .	58
XIX.	Methods of Financing Trucked Grain Shipments, Expressed as a Per Cent of Total Volume of Grain Shipped by Truck, Fifty-nine Country Elevators, Missouri, 1956 ,	60
XX.	Changes in Grading Practices Since 1946, Fifty- nine Country Elevators, Missouri, 1956	71

LIST OF APPENDIX TABLES

TABLE	PAGE
I. Average Price per Bushel Received by Farmers, and Average Price per Bushel Paid at a Terminal Market for <u>Corn</u> , 1946-1956	81
II. Average Price per Bushel Received by Farmers, and Average Price per Bushel Paid at a Terminal Market for <u>Wheat</u> , 1946-1956	82
III. Average Price per Bushel Received by Farmers, and Average Price per Bushel Paid at a Terminal Market for <u>Soybeans</u> , 1946-1956	83
IV. Average Price per Bushel Received by Farmers, and Average Price per Bushel Paid at a Terminal Market for <u>Oats</u> , 1946-1956	84
V. Per Cent of Grain Sold from the Farm, 1955	85
VI. Per Cent of the State's Total Number of Each Class of Livestock in Each District, Missouri, January 1, 1956	86

LIST OF FIGURES

FIGURE	PAGE
1. Missouri Crop Reporting Districts	10
2. Range in Margins on Rail Shipments of Five Grains, Fifty-nine Country Elevators, Missouri, 1956 . .	34
3. Sale Outlets Expressed as a Per Cent of the Total Volume of all Grain Sold, Fifty-nine Country Elevators, Missouri, 1956	41
4. Average Gross Margins on Rail Shipments of Four Grains, by Crop Reporting Districts, Fifty-nine Country Elevators, Missouri, 1956	55

CHAPTER I

INTRODUCTION

Missouri farmers received an income in 1956 of approximately \$253,000,000 directly from the sale of grain. This amount represents nearly 25 per cent of their cash farm receipts, and its importance as a source of farm income in Missouri was exceeded only by the sale of livestock. (See Table I.) When livestock are considered as just another form in which grain may be marketed, the importance of grain to farm income is shown even more clearly.

Country grain elevators are the sales outlet for about 80 to 90 per cent of the grain which farmers sell.¹ This would indicate that the pricing and trading practices of country elevators play a somewhat important role in the grain producer's economy.

It is the function of price to communicate the consumers' desires, preferences, and appraisal of quality back to the producer. If the communication is perfect, there is perfect allocation of resources to grain production. The producer of premium quality is rewarded with a premium price, and the price of low quality grain is discounted.

¹Richard L. Kohls, Marketing of Agricultural Products (New York: The Macmillan Company, 1955), p. 277.

TABLE I.

CASH FARM INCOME FROM THE SALE OF GRAIN, AND LIVESTOCK AND
LIVESTOCK PRODUCTS, MISSOURI FARMERS, 1955 AND 1956*

	<u>1955</u>	<u>1956</u>
Livestock and Livestock Products:	\$615,959,000	\$660,184,000
Grain:		
Wheat	87,036,000	38,524,000
Soybeans	75,643,000	80,279,000
Corn	51,016,000	73,255,000
Oats	6,185,000	5,675,000
Barley	2,350,000	2,371,000
Sorghum Grains	809,000	2,071,000
Rye	706,000	538,000
Total for Grains:	\$223,745,000	\$252,713,000

*State Agricultural Statistician.

Imperfections in this communication process prevent the measuring and reflecting of quality differences correctly.

Price differentials and related grain movements are brought about by many factors, including supply and demand shifts, and transportation costs. Knowledge of value to farmers, the grain trade, and others can be improved by analyzing the forces causing price patterns and grain movement changes. Information on the performance of price in reflecting demand may aid the producer in making the decision of when and where to market grain.

I. PURPOSE OF THE STUDY

The purpose of the study is to obtain information concerning the pricing and trading practices of country grain elevators in Missouri that will be of value to grain producers, elevator operators, and others who are interested in grain marketing efficiency.

An attempt was made to learn the current sources of pricing information used by country elevator operators, their marketing margins, methods of sale, and practices employed in quality determination of grain.

As more information on grain marketing is made available, there will be a tendency for increased efficiency in the process of moving grain and its products from producers to consumers.

II. SCOPE AND METHOD

Pricing and trading practices data from country elevators were secured on survey questionnaires by personal interviews with the elevator owner or his manager.

The sample consisted of a 10.5 per cent sample of elevator firms in Missouri drawn as follows: 75 per cent from the upper 50 per cent and 25 per cent from the lower 50 per cent in volume of grain handled as reported for the North Central Regional Marketing Study NCM-B-2- schedule. For the proportion of the population for which volume was not available, the same procedure was followed, except for substituting total storage capacity for volume of grain handled. The sample was drawn by Missouri Crop Reporting Districts, with no minimum size sample required from a District.

The personal interviews were made during the summer of 1957. The elevator operator, or his representative, was asked to base his answers on the previous year's operation (1956).

It may be emphasized that estimates were given for most of the data, however the estimates were made by the person most intimately acquainted with the firm's operation. In some instances complete information was not available due to a change in recent management, however it is believed that the information collected represents a

reasonable degree of accuracy.

III. DEFINITIONS OF TERMS USED

Country Elevator. A firm which is engaged in purchasing grain directly from the producer for the purpose of resale through unprocessed grain channels.

Terminal Markets. Grain markets which receive all of their grain from other elevators.

Car-lot dealers or brokers. Those dealers that buy only in car-load lots. Also dealers and commission firms that act as brokers and charge a fee for selling the grain on the market.

Terminal Quotation. Price of grain as quoted by a terminal market.

Processors. Firms which are engaged in grinding, mixing, pressing or otherwise changing the form of the raw grain.

Sub-terminal Elevators. Elevators which receive between 50 and 90 per cent of their grain from other elevators, and the remainder direct from the producer.

Truckers. People who buy grain from an elevator and transport it by truck in order to sell it to another person or agency.

Local Feeders. Persons in the local trade area who buy grain for the purpose of feeding it to livestock,

Home Office. A firm's headquarters which is located in some other town.

Gross Margin. The amount charged per bushel for handling the grain.

Scalping. The process of removing major foreign material from grain.

Cleaning. The removal of all foreign material from grain.

Blending. The process of mixing two or more grades of grain in order to raise the grade and value of the lot.

Local Sales. Grain sold to local feeders and mills.

Consigned to Terminals. Grain consigned to a terminal agency for sale.

Interior Points. Markets not located at the major terminals.

Large Elevator. An elevator among the upper 50 per cent in volume of grain handled or storage capacity.

Small Elevator. An elevator among the lower 50 per cent in volume of grain handled or storage capacity.

IV. GRAIN PRODUCTION IN MISSOURI

Missouri is an important producer of all the major grains. As shown in Table II, it ranked between fifth and ninth place among all states in the production of the seven main grain crops grown in the United States for the year

TABLE II

PER CENT EACH GRAIN WAS OF TOTAL GRAINS PRODUCED, PRODUCTION
OF MAJOR GRAINS, AND RANK AMONG ALL STATES IN
GRAIN PRODUCTION, MISSOURI, 1956*

Grain	Per cent each grain was of total grains produced in Mo.	Production for Mo. (bushels)	Missouri's rank in production
Corn	55.9	189,408,000	6
Wheat	14.7	49,800,000	8
Oats	12.4	42,129,000	9
Soybeans	11.6	39,120,000	5
Barley	3.5	11,826,000	8
Sorghum Grains	1.7	5,610,000	8
Rye	.2	765,000	7
Total	100.0	338,658,000	

*Crop Production July, 1957, and October, 1957,
United States Department of Agriculture, Agricultural Market-
ing Service, Washington, D. C.

TABLE III

PRODUCTION OF MAJOR GRAINS BY CROP REPORTING DISTRICTS, MISSOURI, 1955*

District	(In thousands of bushels)						
	Corn	Wheat	Oats	Soybeans	Barley	Sorghum Grain	Rye
I (Northwest)	38,550	8,600	8,863	2,892	338	424	88.6
II (North Central)	24,768	4,856	6,414	5,746	436	313	88.6
III (Northeast)	20,982	5,101	5,593	7,838	497	12	75.7
IV (West)	14,810	6,269	8,575	1,238	3,737	347	119.2
V (Central)	25,356	8,338	8,995	1,555	3,204	505	130.2
VI (East)	16,461	5,855	2,717	1,398	1,341	45	60.5
VII (Southwest)	4,048	5,130	5,529	618	3,377	534	159.0
VIII (South Central)	4,288	1,526	1,535	198	402	99	43.2
IX (Southeast)	15,941	2,406	811	12,467	693	46	257.0
State	165,204	48,081	49,032	33,950	14,025	2,325	1,022.0

*Missouri Farm Census by Counties, 1955, (Missouri State Department of Agriculture, Jefferson City, Missouri), pp. 8-13.

1956.

Missouri is divided into nine Crop Reporting Districts. Within the Districts are found relatively homogeneous conditions as relates to soil and climatic conditions. See Figure 1, for a map indicating the geographical locations of the Crop Reporting Districts.

District I (Northwest) is the most important grain producing district of the nine Crop Reporting Districts in Missouri. Of the total bushels of all grain produced in Missouri during the ten year period 1946-1955, District I accounted for an average of 20.6 per cent, followed by District V (Central) with 13.4 per cent of the state's total grain production. (Table IV.)

In the production of the various classes of grain, District I led in the production of corn and oats and had a very close second place for wheat production after District VI (East). District IX (Southeast) led in the production of soybeans and rye, while District VII (Southwest) was first in the production of barley. District IV (West) had by far the largest production of sorghum grains. District VIII (South Central) ranked lowest in grain production, but not in the number of livestock (See Appendix Table VI, p.86); therefore it is a grain deficient area.

The production of all the major grains in Missouri has tended to increase over the past two decades, however,

MISSOURI

- I NORTHWEST
- II NORTH CENTRAL
- III NORTHEAST
- IV WEST
- V CENTRAL
- VI EAST
- VII SOUTHWEST
- VIII SOUTH CENTRAL
- IX SOUTHEAST

FIGURE 1

CROP REPORTING DISTRICTS

TABLE IV

TEN YEAR AVERAGE ANNUAL GRAIN PRODUCTION BY CROP REPORTING DISTRICTS,
AND THE PER CENT OF THE STATE'S TOTAL GRAIN THAT WAS PRODUCED
IN EACH CROP REPORTING DISTRICT, MISSOURI, 1946 - 1955*

Grain	Missouri Crop Reporting Districts									State
	I	II	III	IV	V	VI	VII	VIII	IX	
	(thousands of bushels)									
Corn	38,093	20,254	17,762	16,600	20,462	13,736	4,994	4,277	13,615	149,798
Oats	7,349	5,157	4,856	7,088	6,862	2,508	6,292	1,713	706	42,531
Wheat	5,206	2,952	3,327	4,025	4,909	5,269	3,550	878	1,815	31,931
Soybeans	1,160	3,460	5,913	1,011	798	836	616	104	9,256	23,154
Barley	60	67	73	699	610	505	974	200	274	3,462
Sorghum Grains	74	93	34	313	124	9	134	20	16	817
Rye	53	37	42	61	56	62	77	25	126	539
Total, all grain	52,000	32,020	32,007	29,797	33,821	22,925	16,637	7,217	25,808	252,232
Per cent	20.6	12.7	12.7	11.8	13.4	9.1	6.6	2.9	10.2	100.0

*Missouri Farm Census By Counties, 1946 to 1955, Missouri State Department of Agriculture, Jefferson City, Missouri.

TABLE V

PER CENT OF THE STATE'S TOTAL PRODUCTION OF EACH KIND OF GRAIN THAT WAS GROWN
IN EACH CROP REPORTING DISTRICT, BASED ON TEN YEAR'S PRODUCTION,
MISSOURI, 1946 - 1955*

Grain	Missouri Crop Reporting Districts									State Total
	I	II	III	IV	V	VI	VII	VIII	IX	
	Per cent									
Corn	25.4	13.5	11.9	11.1	13.7	9.2	3.3	2.8	9.1	100.0
Oats	17.3	12.1	11.4	16.7	16.1	5.9	14.8	4.0	1.7	100.0
Wheat	16.3	9.3	10.5	12.6	15.4	16.5	11.2	2.5	5.7	100.0
Soybeans	5.0	14.9	25.5	4.4	3.4	3.6	2.7	.5	40.0	100.0
Barley	1.7	1.9	2.1	20.6	17.5	14.5	28.1	5.7	7.9	100.0
Sorghum grains	9.0	11.3	4.1	38.4	15.2	1.1	16.4	2.5	2.0	100.0
Rye	9.9	6.9	7.7	11.3	10.4	11.5	14.3	4.7	23.3	100.0

*Missouri Farm Census By Counties, 1946 - 1955, Missouri State Department of Agriculture, Jefferson City, Missouri.

the largest growth has been in the production of soybeans, sorghum grains and barley. This has come about mainly because of improved varieties, mechanization, acreage control programs, and the occurrence of droughts which discouraged dependence upon corn as a grain crop in some areas of the state.

V. GRAIN MARKETING DEVELOPMENTS IN MISSOURI

Many changes in production and marketing of grains have occurred during the past twenty years. The increased production of soybeans, greater yield of corn, and new wheat and grain sorghum varieties have created changes in price patterns, both seasonally and locationally. Development of combines, corn pickers, and motor trucks have forced many changes in marketing and pricing methods. These mechanical innovations have shortened the harvest period considerably, and have greatly increased the daily volume of grain which a country elevator must be prepared to handle.

Prior to the development of motor trucks it was necessary for the country elevators to be located close to the farms from which it received its grain. This situation encouraged the development of a large number of small firms. Today, with good roads and motor trucks, distance is not the barrier for farmers that it once was in marketing their

grain. When the grain is loaded on the truck, and with good roads, the farmer does not hesitate to drive a few miles further in order to receive a higher price for his grain. It is reasonable to believe that this has significantly increased competition among country elevators for the farmers' grain.

A large percentage of the farmer's cash grain first enters the commercial marketing channel when it is sold to the country elevator. From here most of it is sent to terminal elevators, or to various processors where it may be changed into many different products before final consumption.

Ownership of these country grain marketing channels is vested in business units organized as (1) a privately owned firm operating several plants, (2) a privately owned single plant operation, and (3) cooperatives.

In the sample of 59 country elevators drawn for this study it was found that there were 17 being operated by a firm which owned several elevators; 28 which were single plant operations; and 14 cooperatively owned elevators.

The elevators which were operated by a firm that operated several plants had the greatest average storage capacity and also the largest average volume of grain handled. (Table VI.)

However, it was observed that the firms organized as stated above in (1), (2), and (3) had ratios of volume

TABLE VI

A COMPARISON OF STORAGE CAPACITY VERSUS VOLUME OF GRAIN HANDLED,
 BY TYPE OF FIRM OWNERSHIP, FOR FIFTY-NINE COUNTRY ELEVATORS,
 MISSOURI, 1956

Type of Firm	Number of Elevators	(in thousands of bushels)								Ratio of Volume to Storage Capacity
		Storage				Volume				
		Total	Av.	Median	Range	Total	Av.	Median	Range	
(a)*	17	1,221	72	75	5-230	5,263	310	230	4-871	4.3:1
(b)*	28	1,072	38	25	4-200	6,490	232	177	5-1,210	6.1:1
(c)*	14	612	44	26	6-200	2,608	186	152	7-752	4.3:1
Total	59	2,905	49	28	4-230	14,361	243	177	4-1,210	4.9:1

- *(a) Firm operating several elevators (privately owned).
 *(b) Single elevator operation (privately owned).
 *(c) Cooperative owned elevators.

handled to storage capacity of approximately 4:1, 6:1, and 4:1, respectively. This would indicate that it was the single plant operations which had the higher degree of facility utilization in this particular study.

The 59 country grain elevators included in this study, had an average storage capacity of 49,000 bushels, and the average volume of grain handled during 1956 was 243,000 bushels. (Table VI.) Their ratio of volume handled to storage capacity was approximately 4.9:1.

For the years 1955 and 1956 the sale of wheat, soybeans, and corn accounted for approximately 95 per cent of the cash receipts for all grain sold by Missouri farmers. (Table I.) Of these, wheat was the most important cash grain crop, followed next by soybeans, and then corn. It appears very likely that soybeans may replace wheat as the main cash crop for Missouri in the near future.

VI. ABSTRACT OF SUCCEEDING CHAPTERS

In the succeeding chapters the trading and pricing practices of country elevators will be dealt with in an attempt to better understand the impact of these factors on the efficiency of grain marketing in the state of Missouri. In Chapter II, the pricing information used by country elevators will be examined: the sources of pricing information, and to what extent recent changes have occurred in

this field. Farm prices for grain in the various Crop Reporting Districts in Missouri will be compared and their relationship to terminal prices discussed.

Chapter III will deal with marketing margins charged by country elevators. Present gross margins will be examined; comparisons of margins will be made by size of firm, type of sales outlet, by type of firm ownership, and by Crop Reporting District. Changes in margins during the past ten years, and the causes of these changes, will be discussed.

In Chapter IV the methods of sale used by country grain elevators will be examined. The sales outlets, the methods of transportation, and how trucked grain shipments are financed will each be discussed.

Chapter V will deal with quality determination and grain grading. An attempt will be made to discover the existing grain grading practices at the country elevator, and the changes in grading practices over the past decade. The merchandising practices of country grain elevators will also be examined.

Chapter VI will summarize the findings of the research.

CHAPTER II

GRAIN PRICING

Price may be defined as value in terms of money; with value being the power of one commodity to command another commodity in exchange.

In a free, competitive society prices guide the production, distribution, and consumption of commodities. Higher prices will induce producers and sellers to try to increase supply and sales. However, an increased price will have a tendency to reduce the quantity which buyers and consumers will take. Thus, the price at which the commodity will clear the market reflects the influences of buyers, sellers, producers, and consumers.

In the establishment of a price for grain the basic forces contributing to this figure may be summed up and placed under the titles of supply and demand. However, these two simple titles cover a multitude of causative or contributing factors. In the case of grain prices, it not only is the present demand and supply situation that makes an impression on the market, but also anticipated situations for the months ahead. These anticipations are expressed and impressed on the market for grain by trading in the grain futures market. In recent years governmental price support programs have also played an important role in

establishing grain prices and pricing techniques.

Several programs of the United States Department of Agriculture contribute to grain price determination. The most important of which are the price-support programs. These bring into the market place an additional type of buyer; the Government -- a potential buyer with relatively unlimited financial resources. The Government competes with commercial buyers, but unlike them its objective is to stabilize or raise prices received by farmers rather than to make a profit on its operations.

Futures markets are of direct interest to farmers because futures prices are used as base prices in the buying and selling of cash commodities. Futures prices influence cash prices whether the buying and selling of the cash commodity takes place on the floor of the Kansas City Board of Trade, whether it centers around the commodity exchanges that are not futures markets, or whether it takes place at hundreds of local markets where grain is sold.

In the final analysis it is supply and demand throughout the world that decides what the price for grain will be, whether it be cash wheat in carloads sold on the table or futures orders traded in the pit of the board of trade. The present and prospective stocks of grain, the consumer's income, his tastes, and his willingness to buy,

governmental policies, and foreign trade prospects are all considered and weighed by grain traders. Therefore, it is this multitude of forces, which go into making supply and demand, all competitively operating in a market, that ultimately, and collectively determine the price for grain.

I. SOURCES OF PRICING INFORMATION

In this study, the elevator operator was asked to estimate the number of bushels of each grain which he bought in 1956 based on each of the following sources of pricing information: car-lot dealers or brokers, terminal quotations, processors, truckers, local feeders, and home office. It was reported that 86.9 per cent of all grain purchased by the country elevators surveyed in this study was based on pricing information received from terminal quotations, and car-lot dealers or brokers. The most important single source was terminal quotations which accounted for an average of 65.6 per cent of the pricing information used as a base price by these country elevator operators for purchasing grain from farmers. Car-lot dealers or brokers were next in importance with 21.3 per cent. Home offices ranked third as a source of pricing information by contributing an average of 5.3 per cent. Processors, truckers, and local feeders accounted for a total of 7.8 per cent of the pricing information. (Table VII.)

TABLE VII

SOURCES OF PRICING INFORMATION AND PER CENT OF GRAIN
THAT WAS BOUGHT BASED ON PRICE INFORMATION FROM EACH SOURCE,
FIFTY-NINE COUNTRY ELEVATORS, MISSOURI, 1956

Source	(Per cent)
Terminal Quotations	65.6
Car-lot Dealers or Brokers	21.3
Home Office	5.3
Truckers	3.0
Local Feeders	2.7
Processors	2.1
Total	100.0

Changes in source of pricing information since 1946.

Only one country elevator operator, out of the fifty-nine operators who were interviewed, reported a change in source of pricing information for the past ten year period. The operator who reported a change said he was now receiving his pricing information from Kansas City instead of from St. Louis. Two of the elevator operators had been in their present business too short a period of time to report any changes. This would seem to indicate that there have been no significant changes in the relative importance of the various terminal markets providing pricing information in the past ten years.

II. COMPARISON OF GRAIN PRICES AMONG THE CROP
REPORTING DISTRICTS IN MISSOURI

The average prices per bushel received by farmers for corn, wheat, soybeans, and oats in each of the nine Crop Reporting Districts in Missouri were obtained for the eleven year period 1946-1956. (Table VIII.) Average U. S. farm prices and average terminal market prices for these grains for the same period of time were also secured. This was done for the purpose of discovering the differences in the level of prices at the farm and also to study the relationship between these farm prices and the terminal market prices for grain.

TABLE VIII

ELEVEN YEAR AVERAGE PRICE PER BUSHEL RECEIVED BY FARMERS, AND AVERAGE PRICE PER BUSHEL
PAID AT A TERMINAL MARKET FOR CORN, WHEAT, SOYBEANS, AND OATS;
1946 - 1956, INCLUSIVE*

	Missouri Crop Reporting Districts									Mo. State Average	United States Average	K.C. Terminal Average
	(Dollars per bushel)											
	I	II	III	IV	V	VI	VII	VIII	IX			
Corn	\$1.526	\$1.500	\$1.498	\$1.533	\$1.565	\$1.529	\$1.570	\$1.564	\$1.515	\$1.528	\$1.493	\$1.635
Wheat	2.075	2.021	2.022	2.052	1.993	2.030	2.035	2.004	2.044	2.039	2.036	2.275
Soy- beans	2.648	2.635	2.700	2.613	2.656	2.617	2.608	2.695	2.626	2.635	2.702	2.980**
Oats	\$.822	\$.802	\$.771	\$.795	\$.846	\$.829	\$.810	\$.883	\$.805	\$.815	\$.806	\$.873

*Source: See Appendix TABLES I, II, III, and IV, pp. 81-84

**Chicago Terminal Market for Soybeans.

The eleven year (1946-1956) average price received for corn by farmers in the nine Crop Reporting Districts in Missouri had a range of 7.2 cents per bushel between the high and low districts. (Table VIII.) The range extended from a low of \$1.498 per bushel for District III (Northeast) to a high of \$1.57 in District VII (Southwest). The explanation for this price differential may be the transportation costs involved in the shipment of corn and the fact that a relatively small amount of corn is produced in District VII. (Table IV, p. 11.) On the other hand, District III produced considerably more corn than District VII, in addition to being located near the surplus corn producing area of Illinois. This would indicate that transportation costs for moving it to an area deficient in corn would have to be subtracted from the price paid to a farmer for his corn in District III. The Mean Deviation in the average yearly prices per bushel received^{as} by farmers for corn during this eleven year period was approximately 2.2 cents among the nine Crop Reporting Districts in Missouri.

The eleven year (1946-1956) average price received for wheat by farmers in the nine Crop Reporting Districts in Missouri had a range of 8.2 cents per bushel between the high and low Districts. (Table VIII.) The average price received extended from a low of \$1.993 per bushel in District V (Central) to a high of \$2.075 in District I

(Northwest). One possible explanation for this difference may be the fact that most of District I is located much nearer the Kansas City terminal market than is District V, which should result in lower transportation costs for wheat produced in District I. It was observed that three of the four Districts where the average farm price for wheat was highest were located on the western side of Missouri and bordering Kansas. This western Great Plains area is noted for its large production of high quality hard red winter wheat, which may have some favorable effect on prices received for wheat from the western edge of Missouri. The Mean Deviation between the eleven year average prices received for wheat by farmers in the nine Crop Reporting Districts was found to be about 1.9 cents per bushel.

The eleven year (1946-1956) average price received for oats by farmers in the nine Crop Reporting Districts had a range of 11.2 cents per bushel between the Districts. (Table VIII.) District III (Northeast) had the lowest average price for the period with 77.1 cents per bushel, whereas District VIII (South Central) farmers received the highest average price per bushel of 88.3 cents. However, in oat production District VIII ranked next to the lowest, but in livestock production it was somewhat more important. (See Appendix Table VI, p.86.) This would indicate that there would be a good local demand for oats, as well as for

other feed grains, that were produced in the area, and hence a favorable price situation for the growers. The Mean Deviation of the average prices per bushel received for oats by farmers was 2.4 cents among the nine Districts.

The eleven year (1946-1956) average price received for soybeans by farmers in the nine Missouri Crop Reporting Districts had a range of 8.2 cents per bushel between the Districts. (Table VIII.) The lowest average farm price for the period was \$2.608 for District VII (Southwest), and the highest was \$2.700 for District III (Northeast). District III borders the Mississippi River, therefore has access to barge transportation. It is located relatively near the important soybean markets in Chicago and other points in Illinois. This may help to account for the higher average price for District III. On the other hand, District VII is located in the southwest corner of the state, and more distant from any major soybean processing plants. There aren't enough soybeans produced in this area to attract soybean oil mills. The Mean Deviation of the average prices received for soybeans by farmers in the nine Crop Reporting Districts for this period was approximately 2.7 cents per bushel.

A comparison was also made between the eleven year (1946-1956) average price received by Missouri farmers for corn, wheat, soybeans, and oats, and the average price

received by farmers for these grains in the United States as a whole. (Table VIII.) It was found that Missouri farmers received a slightly higher average price for the period, than the United States farm average, for corn, wheat, and oats. However, for soybeans it was noted that they received approximately 6.7 cents per bushel less than the average United States farm price for the period. There may be some association between this and the fact that Missouri has relatively few soybean oil mills as compared to other important soybean producing states such as Illinois and Iowa.¹ Therefore, transportation costs involved in moving the soybeans from Missouri farms to an oil mill may be greater.

Relationship of grain prices at the farm and at terminal markets. Terminal grain markets, such as those found in Kansas City, St. Louis, and Chicago, and at other centers, are the most important sales outlet for country grain elevators.² In this particular study of fifty-nine country grain elevators in Missouri, it was found that these elevators used terminal or sub-terminal agencies as sales outlets for about 72.4 per cent of the total grain sold.

¹United States Department of Agriculture, The Year-book of Agriculture: 1954. Marketing (Washington: Government Printing Office, 1954), p. 457.

²Kohls, loc. cit.

(Table XVII, p. 56.)

Comparisons were made of the average Missouri farm price for the major grains and the average terminal price for these grains. The widest spread between farm and terminal price was for soybeans, and the most narrow spread was for oats. For the eleven year period (1946-56), terminal prices for soybeans averaged approximately 34.5 cents per bushel more than the farm price; 23.6 cents per bushel higher for wheat, 10.7 cents higher for corn, and 5.8 cents per bushel higher for oats. (Table VIII.) The greatest difference between the farm and terminal price was for the grains used more for food (wheat and soybeans), and the smaller differences were for the feed grains (corn and oats). These differences in margins on the various kinds of grain may be due to the greater length of the marketing channel for wheat as compared to that for corn and oats; and to the greater risk of price fluctuation in the case of soybeans. It should also be pointed out that terminal prices are for a specific quality of grain, whereas the average farm price is for all grades and qualities.

CHAPTER III

MARKETING MARGINS FOR COUNTRY GRAIN ELEVATORS

Country grain elevators perform a service in grain marketing by furnishing the farmer a cash sales outlet for most of the grain which he sells.¹ The remuneration which the elevator operator receives for this service is the difference in price between what he pays to the grain producer and that price which he receives for the grain when he, the elevator operator, in turn sells it. This price differential is the gross margin received by the grain elevator operator for his merchandising function.

The elevator's gross margin, when referred to in this study, will be the difference between the price the elevator pays for the grain and the price which it receives, less the cost of transportation to the elevator's sales outlet. Thus, if the elevator pays \$1.80 per bushel for wheat; sells it for \$1.93 per bushel, and the transportation costs are five cents, the elevator's gross margin is eight cents. Out of this gross margin the elevator operator pays for labor, other operating costs, and attempts to obtain a profit from the operation.

¹Kohls, loc. cit.

A decline in the price of grain between the time it is bought and sold may result in reducing the gross margin which the elevator operator attempts to maintain. Some elevators try to reduce the risk of loss due to price fluctuation by selling futures contracts in the amount of their cash purchases of the physical commodity. This type of offsetting transaction in the grain futures market is known as hedging. In a study of 150 country grain elevators in Missouri, Temple reported that about 33 per cent of the elevators practiced hedging.²

I. PRESENT GROSS MARGINS FOR FIFTY-
NINE COUNTRY GRAIN ELEVATORS IN MISSOURI
FOR GRAIN SHIPPED BY RAIL, BY TRUCK, AND SOLD LOCALLY

The grain elevator operators who were interviewed for this study were asked to give the gross margins per bushel which they normally obtained for handling the various kinds of grain. Gross margins for grain sold locally, shipped by rail, and shipped by truck were listed separately. This information was summarized and is shown in Table IX.

The average gross margin for grain sold locally was found to be from about one to four cents per bushel more than

²Norman F. Temple, "Characteristics of Country Grain Elevators in Missouri as They Relate to Grain Marketing" (unpublished Master's thesis, University of Missouri, Columbia, Missouri, 1955), p. 108.

TABLE IX
GROSS MARGINS OF FIFTY-NINE COUNTRY ELEVATORS FOR GRAIN
SHIPPED BY RAIL, TRUCK, AND SOLD LOCALLY,
MISSOURI, 1956

	(cents per bushel)								
	Corn			Wheat			Soybeans		
	Rail	Truck	Local	Rail	Truck	Local	Rail	Truck	Local
Average	7.2	7.7	8.8	7.6	7.4	*	8.2	7.5	*
Median	8.0	8.0	10.0	8.0	7.0	*	8.0	7.0	*
Range	4-10	3-15	3-15	3-12	3-13	*	4-12	2-13	*

	Oats			Barley			Sorghum Grains		
	Rail	Truck	Local	Rail	Truck	Local	Rail	Truck	Local
	Rail	Truck	Local	Rail	Truck	Local	Rail	Truck	Local
Average	6.7	7.5	8.7	7.0	*	8.0	6.9	7.6	11.6
Median	6.0	7.0	9.5	7.0	*	8.5	7.0	7.0	13.0
Range	4-15	3-13	3-18	0	*	5-10	5-10	5-12	5-17

*Indicates no sale of grain through this outlet was reported.

the average gross margin for grain shipped by rail or truck. This would seem logical since grain sold locally would usually be in relatively small individual lots, and thus require more handling and labor per dollar of sale volume.

For corn, the average gross margin for local sales was 8.8 cents per bushel; 7.7 cents for truck shipments, and 7.2 cents per bushel for rail shipments. The average gross margins for wheat was 7.6 cents per bushel for rail shipments and 7.4 cents for truck shipments. Soybeans showed an average gross margin of 8.2 cents per bushel for rail shipments and 7.5 cents for those shipped by truck. No margins are shown for local sales of wheat and soybeans since practically none of these grains were reported to have been sold locally. The average gross margin for oats sold locally was 8.7 cents per bushel; 7.5 cents for truck shipments and 6.7 cents per bushel for shipments by rail. For barley, the average gross margin was 8.0 cents per bushel on local sales, and 7.0 cents per bushel for rail shipments. No truck shipments were reported. The average gross margin reported for sorghum grains was 11.6 cents per bushel for that which was sold locally; 7.6 cents per bushel for truck shipments, and 6.9 cents per bushel for rail shipments.

The Median gross margin for rail shipments of corn, wheat, and soybeans was 8.0 cents for each of them. Barley and sorghum grains each had 7.0 cents per bushel as the

Median gross margin for shipments by rail. The median gross margin for oats shipped by rail was 6.0 cents per bushel.

For truck shipments, of wheat, soybeans, oats and sorghum grains the Median gross margin was 7.0 cents per bushel. The Median gross margin for corn was 8.0 cents per bushel.

The Median, as well as the average, gross margin was higher for grain sold locally than for grain shipped out by rail or truck for all the grains that were sold locally. The Median gross margin for local sales of corn was 10.0 cents per bushel, 9.5 cents for oats, 13.0 cents for sorghum grains, and 8.5 cents per bushel for barley.

The range in gross margins for rail shipments was from 4-10 cents per bushel for corn, 3-12 cents for wheat, 4-12 cents for soybeans, 4-15 cents for oats, and 5-10 cents per bushel for sorghum grains. (See Figure 2.) Seven cents per bushel was the only amount given as the gross margin for rail shipments of barley. Only two elevators reported rail shipments of this grain.

The range in gross margins reported for local sales of grain were equal to or greater than the ranges reported for grain shipments by truck or by rail for each kind of grain that was sold locally. The widest range in gross margins was from 3-18 cents per bushel which was reported for oats. (Table IX.)

FIGURE 2

RANGE IN MARGINS ON RAIL SHIPMENTS OF FIVE
GRAINS, FIFTY-NINE COUNTRY ELEVATORS,
MISSOURI, 1956

For truck shipments, the range in gross margins per bushel was from one to six cents greater than those for shipments by rail for each kind of grain except oats. For oats, the range in gross margins was one cent per bushel more for rail than for truck shipments.

The average gross margins, for the elevators as a whole, were slightly higher for truck shipments of corn, oats, and sorghum grains than for rail shipments of these grains. The reverse was true in the case of wheat and soybeans. This differentiation did not exist for individual elevators, however. In comparing the margins for individual elevators it was noted that when a difference existed between margins on grain shipped by truck, and that which was shipped by rail, this difference existed for each kind of grain handled. That is, it wasn't reported that a larger margin was obtained on one kind of grain if it was shipped by truck, and a larger margin on another kind of grain if it was shipped by rail.

Forty-three of the fifty-nine elevator operators who were interviewed reported that their margins were the same for both rail and truck shipments of grain. Most of the differences which did exist were reported to be two cents or less per bushel.

Comparison of gross margins for large and small elevators. A comparison of gross margins for large and

small elevators was made to discover whether or not large volume elevators, because of their large volume, operated on lower margins. The results are shown in Table X. In this sample, the large elevators had average gross margins of from .1 cent to 1.5 cents per bushel greater than the small elevators for corn, wheat, soybeans, and barley. On the other hand, small elevators had average gross margins of .3 cent and 1.2 cents per bushel more than the large elevators for sorghum grains and oats, respectively.

The results of this comparison do not seem to substantiate the idea that elevators with large volume operate with lower margins, or that because of their lower margin they get more business and therefore become large volume elevators.

Comparison of gross margins among the three types of firm ownership. The results of a comparison of gross margins for the different types of firm ownership are given in Table XI. The highest average gross margins reported for corn and oats were on local sales by private firms which operated several elevators. For wheat, the highest average gross margin was for rail shipments made by firms operated as cooperatives. The highest average gross margin for soybeans was reported by private firms operating a single elevator, and was for rail shipments.

Both the highest and lowest average gross margin

TABLE X
COMPARISON OF THE GROSS MARGINS OF LARGE ELEVATORS AND SMALL ELEVATORS,
BY KIND OF GRAIN, FIFTY-NINE COUNTRY ELEVATORS,
MISSOURI, 1956

Grain	(cents per bushel)					
	Large Elevators			Small Elevators		
	Average	Median	Range	Average	Median	Range
Corn	8.1	8.0	4-13	8.0	7.5	3-15
Wheat	8.0	8.0	3-13	7.0	6.0	3-12
Soybeans	8.4	8.0	2-13	6.9	7.0	3-12
Oats	7.5	7.0	4-13	8.7	8.0	3-18
Barley	7.7	7.0	5-10	6.7	5.0	5-10
Sorghum Grains	8.1	7.0	5-17	8.4	8.0	5-13

TABLE XI

GROSS MARGINS OF FIFTY-NINE COUNTRY ELEVATORS, GROUPED ACCORDING TO TYPE OF
FIRM OWNERSHIP, FOR RAIL SHIPMENTS, TRUCK SHIPMENTS,
AND LOCAL SALES OF GRAIN, MISSOURI, 1956
(cents per bushel)

	Corn			Wheat		Soybeans		Oats		
	Rail	Truck	Local	Rail	Truck	Rail	Truck	Rail	Truck	Local
Cooperatives:										
Average	7.3	8.9	8.7	8.1	8.0	7.7	8.7	6.0	9.0	8.2
Median	8.0	9.0	8.0	8.0	8.0	8.0	10.0	6.0	10.0	9.0
Range	5-8	5-12	5-12	5-12	6-10	4-11	6-10	4-8	6-12	5-10
Private:										
Firm Operating										
Several Elevators										
Average	6.1	7.3	9.1	7.0	7.6	7.8	7.5	6.0	5.8	10.2
Median	7.0	6.5	10.0	7.0	7.5	8.0	7.0	6.0	5.5	10.0
Range	4-8	4-15	4-15	3-10	6-10	5-10	6-10	4-8	5-7	5-18
Private:										
Single Elevator										
Operation										
Average	7.8	7.1	8.8	7.8	7.1	8.8	7.3	7.8	7.0	8.5
Median	8.0	7.0	10.0	8.0	6.5	10.0	7.5	7.0	6.0	8.0
Range	4-10	3-13	3-15	4-11	3-13	5-12	2-13	5-15	3-7	3-15

reported for any kind of grain was for oats, and they were each reported by private firms operating several plants. The lowest average gross margin was 5.8 cents per bushel for truck shipments, and the highest average gross margin was 10.2 cents per bushel for local sales of oats.

It should be pointed out that the amounts reported for gross margins were given in answer to the question of what their margins usually were on the various kinds of grain and for various sales outlets. The differences in margins could be due to differences in buying price, or a difference in selling price, or both. Therefore, it cannot be said that particular types of firms made larger margins because they paid the farmer less for his grain. They could have paid a fully competitive price for the farmer's grain and then, due to an excellent sales outlet, obtained a higher selling price, and thereby a higher margin.

Comparison of gross margins among the Missouri Crop Reporting Districts. A summary was made of the gross margins which country grain elevators usually obtained on the four major grains in each of the nine Crop Reporting Districts in Missouri. The gross margins were listed separately for grain shipped by rail, shipped by truck, or sold locally. This information is presented in Tables XII, XIII, and XIV.

Figure 3 shows that the average gross margin on corn shipped by rail ranged from a low of 5.7 cents per bushel for District I (Northwest), and District VI (East), to a high of 10.0 cents per bushel in District IX (Southeast). The lowest average gross margins for rail shipments of wheat, soybeans, and oats were reported for District VII (Southwest). These margins, per bushel, were 5.3 cents for wheat, 6.0 cents for soybeans, and 5.0 cents for oats. District IX (Southeast) had the highest average gross margins on shipments by rail for corn, wheat, soybeans, and oats. These gross margins averaged 10.0 cents, 8.8 cents, 10.2 cents, and 15.0 cents per bushel, respectively. However, it should be pointed out that for rail shipments of corn and oats in District VII, and for oats in District IX, the above gross margins may or may not be representative for these Districts, because only one firm, in each case, reported rail shipments of these grains. Therefore, a much larger sample would have to be taken before any definite conclusions could be drawn as to the average gross margins on these grains for the elevator population in these Districts. However, it does appear that rail shipment is used for these grains by relatively few elevators in Districts VII and IX.

The gross margins on grain shipped by truck are shown in Table XIII, p. 43. The average gross margin for all the elevators for corn shipped by truck was 7.7 cents per

FIGURE 3

AVERAGE GROSS MARGINS ON RAIL SHIPMENTS OF FOUR GRAINS, BY CROP REPORTING DISTRICTS, FIFTY-NINE COUNTRY ELEVATORS, MISSOURI, 1956
(cents per bushel)

TABLE XII

GROSS MARGINS OF FIFTY-NINE COUNTRY ELEVATORS FOR GRAIN SHIPPED BY RAIL,
 BY CROP REPORTING DISTRICTS, MISSOURI, 1956
 (cents per bushel)

District	Corn			Wheat			Soybeans			Oats		
	Av.	Md.	Range	Av.	Md.	Range	Av.	Md.	Range	Av.	Md.	Range
I	5.7	5.0	4-9	7.0	7.0	5-9	8.3	10.0	5-10	8.0	8.0	0
II	7.5	7.5	7-8	8.5	8.0	6-12	8.8	10.0	7-10	6.3	6.5	5-7
III	8.5	8.0	8-10	8.3	8.0	7-11	8.1	8.0	6-11	6.5	7.0	5-8
IV	8.2	8.0	5-10	8.3	8.0	5-10	8.5	9.0	5-11	6.0	6.0	5-7
V	6.7	7.0	5-8	7.8	8.0	5-10	7.2	8.0	4-10	5.3	4.5	4-8
VI	5.7	5.0	4-8	6.4	6.0	4-8	6.8	7.0	5-8	*	*	*
VII	6.0	6.0	0	5.3	5.0	3-8	6.0	6.0	5-7	5.0	5.0	0
VIII	*	*	*	*	*	*	*	*	*	*	*	*
IX	10.0	10.0	0	8.8	9.0	7-10	10.2	10.0	8-12	15.0	15.0	0
State	7.2	8.0	4-10	7.6	8.0	3-12	8.2	8.0	4-12	6.7	6.0	4-15

*Indicates no rail shipments were reported for this grain.

TABLE XIII

GROSS MARGINS OF FIFTY-NINE COUNTRY ELEVATORS FOR GRAIN SHIPPED BY TRUCK,
 BY CROP REPORTING DISTRICTS, MISSOURI, 1956
 (cents per bushel)

District	Corn			Wheat			Oats			Soybeans		
	Av.	Md.	Range	Av.	Md.	Range	Av.	Md.	Range	Av.	Md.	Range
I	4.8	5.0	4-5	7.8	8.0	5-10	5.0	5.0	0	7.5	7.5	5-10
II	8.3	8.0	7-10	7.3	8.0	6-8	7.3	6.5	6-10	8.3	8.0	7-10
III	11.0	11.0	10-12	7.0	6.0	6-10	11.0	11.0	10-12	7.0	6.0	6-10
IV	7.0	6.5	5-10	5.0	5.0	0	6.3	7.0	5-7	4.5	4.5	2-7
V	8.0	8.0	0	8.0	8.0	6-10	5.0	5.0	0	6.0	6.0	0
VI	8.3	7.5	5-13	8.5	8.0	5-13	13.0	13.0	0	8.7	8.0	5-13
VII	7.0	7.0	6-8	*	*	*	*	*	*	7.0	7.0	0
VIII	15.0	15.0	0	*	*	*	*	*	*	*	*	*
IX	6.5	6.5	3-10	7.0	7.5	3-10	3.0	3.0	0	8.4	10.0	3-11
State	7.7	8.0	3-15	7.4	7.0	3-13	7.5	7.0	3-13	7.5	7.0	2-13

*Indicates no truck shipments were reported for this grain.

bushel. However, there was a rather wide variation among the various Crop Reporting Districts. The lowest average gross margin for corn was 4.8 cents per bushel in District I (Northwest), which is the most important corn producing District in the state. The highest gross margin for corn was 15.0 cents per bushel which was reported by one elevator in District VIII (South Central). This is a corn deficit area, and has comparatively few grain elevators, because a relatively small amount of any grain is produced in this District. (See Table IV, p. 11.)

For wheat, the average gross margins on truck shipments were fairly uniform. The average gross margin for all elevators was 7.4 cents per bushel. The lowest average gross margin was 5.0 cents per bushel for District IV (West), and the highest was 8.5 cents per bushel for District VI (East). No truck shipments of wheat were reported by the elevators interviewed in Districts VII and VIII.

The average gross margin on oats shipped by truck for all of the country grain elevators that were included in this study was 7.5 cents per bushel. However, there was a rather wide range between the highest and the lowest average gross margins for the Crop Reporting Districts within the state. The lowest gross margin was 3.0 cents per bushel which was reported by one elevator in District IX, and the

highest margin was 13.0 cents per bushel reported by an elevator in District VI. In Districts VII (Southwest) and VIII (South Central) no elevators reported shipment of oats by truck. In Districts I, V, VI, and IX, only one of the elevators in each District reported truck shipments for oats. The information received from the elevator operators that were interviewed for this study indicated that approximately 79.6 per cent of the oats which country elevators buy are re-sold locally. (Table XVI, p. 52.) This would leave a relatively small amount for disposition by truck and rail shipments.

For soybeans, the average gross margin, for all of the country elevators that were surveyed was 7.5 cents per bushel on trucked shipments. Within the Crop Reporting Districts, the average gross margins ranged from a low of 4.5 cents per bushel for District IV (West), to a high of 8.7 cents per bushel for District VI (East). However, in District IV only two elevators reported truck shipments of soybeans. It is therefore felt that before definite conclusions could be reached concerning the relative amounts for the average gross margins between Districts that a much larger sample of elevators would need to be obtained.

Table XIV shows the average gross margins reported by country grain elevators for corn and oats sold locally. The average gross margins for all elevators in this study was 8.8 cents per bushel on corn, and 8.7 cents per bushel

TABLE XIV
GROSS MARGINS OF FIFTY-NINE COUNTRY ELEVATORS FOR
GRAIN SOLD LOCALLY; BY CROP REPORTING DISTRICTS,
MISSOURI, 1956
(cents per bushel)

District	Corn			Oats		
	Av.	Md.	Range	Av.	Md.	Range
I	6.3	5.5	4-10	5.5	5.5	5-8
II	9.2	10.0	8-10	8.2	8.0	6-10
III	11.4	10.0	10-15	11.0	10.0	10-15
IV	8.0	9.0	5-10	8.7	9.0	7-10
V	8.8	10.0	5-10	9.0	9.0	8-10
VI	8.7	8.0	8-10	8.5	8.5	7-10
VII	8.4	8.0	6-10	6.5	5.5	3-10
VIII	15.0	15.0	0	18.0	18.0	0
IX	7.7	5.0	3-15	9.0	9.0	3-15
State	8.8	10.0	3-15	8.7	9.5	3-18

on oats. The average gross margins on corn for the various Crop Reporting Districts ranged from a low of 6.3 cents per bushel for District I (Northwest) to a high of 15.0 cents per bushel in District VIII (South Central). These same Districts had the lowest and highest average gross margins for oats sold locally; with a low of 5.5 cents per bushel in District I, and a high of 13.0 cents per bushel for District VIII. However, there are relatively few grain elevators in District VIII and only one elevator in this district furnished information for this study. This limits the formulation of definite conclusions concerning gross margins in District VIII. It might also be pointed out that District VIII produces a small percentage of the corn and oats grown in Missouri whereas District I ranks high in the production of each of these grains. (See Table III, p. 8.)

Changes in gross margins since 1946. The fifty-nine country grain elevator operators who were interviewed for this study were asked to give the changes which had occurred in their gross margins for each class of grain since 1946. The results are shown in Table XV. For corn, 40 elevator operators reported that there had been no changes in their gross margins since 1946, 7 reported that their gross margins had declined more than 2 cents per bushel, and 3 indicated that their gross margins had declined from 1.1 cents to 2.0 cents per bushel in the previous ten year period.

Wheat and soybeans were the only grains for which any elevator operator reported an increase in gross margin during the past ten years. For each of these two grains, the elevator operator indicated an increase in gross margin of from 1.1 cents to 2.0 cents per bushel. However, the majority of the elevator operators interviewed for this study reported that there had been no changes in their gross margins on the various classes of grain since 1946. Those reporting a decrease in gross margins gave increased competition as the principal reason.

TABLE XV
CHANGES IN GROSS MARGINS ON GRAIN SINCE 1946,
FIFTY-NINE COUNTRY ELEVATORS,
MISSOURI, 1956

Grain	(cents per bushel)			No change	(cents per bushel)		
	over -2	-1.1 to -2	-1 or less		0 to 1	1.1 to 2	over 2
	Number of elevators						
Corn	7	3		40			
Wheat	10	2		40		1	
Soybeans	9	2		31		1	
Oats	5	2		35			
Barley		2		9			
Sorghum grain	1	1		24			

CHAPTER IV

METHODS OF SALE FOR COUNTRY GRAIN ELEVATORS

Country grain elevator operators have many sales outlets for their grain. They sell some of it to local livestock feeders, ship part of it to feed manufacturers, millers, processors, and to livestock feeders in deficit producing areas. However, most of the grain handled by country grain elevators goes to terminal markets.¹ Kohls states that country elevator operators sell about 75 per cent of their grain purchases to terminal elevators.² In this particular study of fifty-nine country grain elevators in Missouri, it was reported that these elevators used terminal or sub-terminal agencies as sales outlets for approximately 72.4 per cent of the total grain sold (Table XVI, p. 52.)

Terminal markets provide market quotations, weighing and inspection services, drying and storage facilities, services of commission merchants, and services of financing, insurance, and forwarding agencies. Farmers, country elevators, or others who wish to ship grain to a terminal market may either sell their grain to a cash grain firm,

¹The Yearbook of Agriculture: 1954. Marketing, op. cit., p. 408.

²Kohls, loc. cit.

consign it to the market for sale by a commission merchant, or to a terminal elevator or warehouse for storage. However, relatively little grain is sold direct from the ~~farm~~ to terminal markets.³ It usually is sold to the country grain elevator first.

I. SALES OUTLETS

The fifty-nine Missouri country elevator operators who were interviewed for this study were asked to estimate the number of bushels of each kind of grain which they had sold through the various sales outlets during the past year. This information is shown in Table XVI.

It was found that there was considerable difference in the type of sales outlets used most for the different kinds of grain. For example, Local Sales were reported to be the most important sales outlet for oats and barley, somewhat less important for corn and sorghum grains, and of practically no importance for wheat or soybeans. Local Sales provided the outlet for approximately 10.9 per cent of the total volume of grain handled by these elevators.

For corn, terminal or sub-terminal elevators and the various agencies connected with them, accounted for approximately 61.0 per cent of the total amount sold by the

³Temple, op. cit., p. 62.

TABLE XVI

PER CENT OF TOTAL VOLUME OF EACH KIND OF GRAIN SOLD GOING THROUGH
EACH SALES OUTLET, FIFTY-NINE COUNTRY ELEVATORS,
MISSOURI, 1956

SALES OUTLET	Per cent					
	Corn	Wheat	Soybeans	Oats	Barley	Sorghum grain
LOCAL SALES	24.1	*	*	79.6	84.0	10.1
RAIL SHIPMENTS:						
Consigned to terminals	26.8	56.0	25.5	2.3	*	44.5
Sold to terminal merchandisers	8.9	16.4	12.2	9.3	*	30.7
Sold to car-lot dealers:						
At terminals	5.4	11.6	11.2	2.7	13.6	*
At interior points	.6	*	*	*	*	*
Sold direct to processors	2.1	1.3	7.6	.6	2.4	.3
TRUCK SHIPMENTS:						
Sold to truckers at elevator	11.7	.3	*	3.9	*	8.1
Sold direct to term.or sub-term.elev.	2.0	8.4	6.0	.2	*	1.5
Sold direct to processors	.5	1.8	6.2	*	*	*
Sold through dealers to:						
Terminal and sub-terminal elevator	1.4	*	1.1	1.4	*	1.4
Processors	*	*	11.0	*	*	1.4
BARGE SHIPMENTS:						
Direct to exporter	*	1.5	15.3	*	*	*
To terminal merchandisers	16.5	2.7	3.9	*	*	*
Total	100.0	100.0	100.0	100.0	100.0	100.0

*Indicates that no grain was reported for that sales outlet.

elevator operators who were interviewed for this study. Local sales represented about 24.1 per cent of the corn sales. Truckers bought about 11.7 per cent, processors bought 2.6 per cent, and car-lot dealers that were not located at the terminal markets were the sales outlet for about .6 per cent of the corn handled by these country grain elevators.

The most important single sales outlet for wheat was rail shipments consigned to terminals. Altogether, terminal or sub-terminal elevators and their agencies provided the sales outlet for about 95.1 per cent of the wheat sold by the elevator operators included in this study. Sales to processors, exporters, and truckers accounted for a total of 4.9 per cent.

Rail shipments consigned to terminals was the most important single sales outlet for soybeans, which was also true for corn and wheat. Terminal or sub-terminal elevators and their agencies provided these elevators the sales outlet for approximately 59.9 per cent of their soybeans. About 24.8 per cent were sold to processors, and approximately 15.3 per cent were reported to have been sold direct to exporters.

Oats and barley were the only grains for which it was reported that Local Sales were the most important sales outlet. These country elevator operators indicated that

about 79.6 per cent of their oats, and 84.0 per cent of their barley was re-sold locally.

For sorghum grains, terminal or sub-terminal elevators and their agencies accounted for approximately 80.1 per cent of the total amount sold by these elevators. They reported that Local Sales accounted for about 10.1 per cent of their sales of sorghum grains, and the remainder was sold to truckers and processors.

The per cent of all grain handled that went through each sales outlet was determined for the fifty-nine Missouri country grain elevators included in this study. This information is shown in Figure 4. It was determined that approximately 10.9 per cent of these elevators' total volume of grain was disposed of through Local Sales. Of the individual classes of grain, oats and barley had a much higher per cent for Local Sales, however, these two grains and sorghum grains made up only a small percentage of the entire volume of grain handled. Terminal and sub-terminal elevators and their agencies provided sales outlets for an average of about 72.4 per cent of all grain sold by the country elevator operators that were interviewed for this study. But for some of the individual classes of grain, such as wheat, for example, the percentage going through terminal agencies was much greater than this. Processors bought approximately 8.1 per cent of the grain sold by these country grain elevator operators, and the remainder was sold

FIGURE 4

SALE OUTLETS EXPRESSED AS A PER CENT OF THE
TOTAL VOLUME OF ALL GRAIN SOLD, FIFTY-
NINE COUNTRY ELEVATORS, MISSOURI, 1956

TABLE XVII
PER CENT OF ALL GRAIN SOLD THAT WENT THROUGH EACH
SALES OUTLET, FIFTY-NINE COUNTRY ELEVATORS,
MISSOURI, 1956

Sales Outlet	(Per cent)
Local Sales	10.9
Rail Shipments:	
Consigned to terminals	37.1
Sold to terminal merchandisers	13.1
Sold to car-lot dealers:	
At terminals	9.0
At interior points	.2
Sold direct to processors	3.1
Truck Shipments:	
Sold to truckers at elevator	4.1
Sold direct to term. or sub-terminal elevator	5.3
Sold direct to processors	2.3
Sold through dealers to:	
Terminal and sub-terminal elevator	.8
Processors	2.7
Barge Shipments:	
Direct to exporter	4.3
To terminal Merchandisers	7.1
Total	100.0

to truckers, car-lot dealers not located at the terminal markets, and to exporters.

II. TRANSPORTATION METHODS USED

The fifty-nine Missouri country grain elevator operators who were interviewed for this study were asked to break down their grain sales for the past year into the types of transportation utilized. This information is presented in Table XVIII.

Rail shipment was the most important method of transportation used for all grains except oats and barley. Most of these two grains were sold locally, which would result in most instances of the livestock feeder hauling the grain from the elevator out to the farm himself. Of the individual kinds of grain, wheat had the highest percentage of rail shipments. It was indicated that approximately 85.3 per cent of the wheat sold by these elevator operators was shipped by rail.

Of the total volume of grain handled approximately 10.9 per cent was sold locally, 62.5 per cent was shipped by rail, 15.2 per cent was shipped by truck, and 11.4 per cent was shipped by barge.

At the bottom of Table XVIII, is shown the per cent that each kind of grain was of the total volume of all grain handled by these fifty-nine country elevators. Wheat accounted for approximately 38.3 per cent of all grain

TABLE XVIII

PER CENT OF EACH KIND OF GRAIN GOING THROUGH EACH OUTLET; PER CENT OF ALL GRAIN GOING THROUGH EACH OUTLET; AND THE PER CENT EACH GRAIN WAS OF TOTAL VOLUME OF ALL GRAIN SOLD, FIFTY-NINE COUNTRY ELEVATORS, MISSOURI, 1956

Outlet	Corn	Wheat	Soybeans	Oats	Sorghum Grain	Barley	Average for All Grain
Local Sales	24.1	-	-	79.6	10.1	83.9	10.9
Rail Shipment	43.8	85.3	56.5	14.8	77.5	16.1	62.5
Truck Shipment	15.6	10.5	24.3	5.6	12.4	-	15.2
Barge Shipment	16.5	4.2	19.2	-	-	-	11.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Per cent each grain was of Total Volume	31.2	38.3	24.1	3.4	2.4	.6	100.0

handled, corn represented 31.2 per cent, and soybeans made up 24.1 per cent. Therefore, these three grains accounted for 93.6 per cent of these elevators' entire volume, which left only 6.4 per cent to be made up by oats, sorghum grains, and barley.

Financing trucked grain shipments. The elevator operators who reported selling grain which was shipped by truck were asked to indicate the method of sale and the method of financing these shipments. The methods of financing were listed as cash or check, elevator financed, and advances from, or drafts on buyers or dealers pending settlement. The information which was obtained is presented in Table XIX.

The most important method of sale category was reported to be direct sales based on country elevator weights and grades, and the most common method of financing was by cash or check. This type of transaction accounted for 37.6 per cent of the trucked grain shipments.

The next most important method of financing trucked grain shipments was advances from or drafts on buyers or dealers pending settlement. This method of financing was reported to have been used for 33.7 per cent of the grain shipped by truck.

Approximately 28.7 per cent of the trucked grain shipments were elevator financed. This method of financing

TABLE XIX

METHODS OF FINANCING TRUCKED GRAIN SHIPMENTS, EXPRESSED AS A PER CENT OF
 TOTAL VOLUME OF GRAIN SHIPPED BY TRUCK, FIFTY-NINE COUNTRY ELEVATORS,
 MISSOURI, 1956

Method of Sale	Method of financing				Total
	Cash or Check	Elevator Financed		Advances from or drafts on buyers or dealers pending settlement	
		Under five-day	Five-day		
		settlements	and longer settlements		
		(Per Cent)			
Direct sales based on country elevator weights and grades	37.6				37.6
Direct (or spot) sales to elevators or pro- cessors on destination weights and grade		4.9	14.6	28.2	47.7
Contract sales through dealers, brokers, or commission firms on des- tination weights and grades		2.8	6.4	5.5	14.7
Total	37.6	7.7	21.0	33.7	100.0

was further broken down into under five-day settlements, and five-day and longer settlements. It was estimated that about 7.7 per cent were under five-day settlements, and that approximately 21.0 per cent of the trucked grain shipments were five-day and longer settlements.

CHAPTER V

QUALITY DETERMINATION OF GRAIN

The determination of the quality of a commodity is very desirable when the commodity is to enter commercial marketing channels. The quality determination processes are commonly referred to as grading. Without some standardized procedures for measuring quality and differentiating grades the marketing and pricing mechanism would be seriously impaired. The buyer would have no idea of the quality of his purchases unless he, or his representative, personally examined the commodity. However, much work remains to be done in the field of refining commodity grades.

Quality determination and standardization of grades inspire confidence and facilitate the exchange function at all levels in the marketing channel. Without grades and the use of somewhat uniform terminology, market reporting and price quotations would be made meaningless or impossible.

Not only is the grading or quality determination of a commodity important, but also a standardized system of weights and measures is essential to orderly marketing. Without these, confusion and misunderstanding would exist throughout the marketing channel. The diverse units which are used in the United States today were inherited from the colonial days when the English settlers brought with them the weights and measures of the mother country. The history

of some of the various units in England can be traced back to medieval times, but the actual origin of some of the units is doubtful.

The need for uniform weights and measures was recognized when the American Colonies united, and the power to establish them was given to the Federal Government.¹ Although the Constitution gives the Federal Government power to regulate trade between states and with foreign countries, there might be argument as to whether its power to fix the standard of weights and measures covers regulation of market practices within a state. At any rate, the control of local use of weights and measures has been largely left to state and local authorities. This condition might be expected to lead to local or regional practices, but various influences have worked toward national uniformity. One is the rapid growth of interstate trade.²

The benefits of standardization and quality determination to the grain industry have been particularly important. For example, grain grading permits the economy of bulk storage and transportation of grain of similar grades. It facilitates financing and trading on the basis of warehouse certificates representing grain of known quality

¹The Yearbook of Agriculture: 1954. Marketing, op. cit., p. 147-148.

²Ibid.

and value, and establishes loan values for grain in farm storage.

Grain grading, and market quotations based on grade, assist producers and handlers of grain to market their grain advantageously. The application of the grain standards shows the causes for market discounts, and indicates ways and means for crop-improvement and grain-handling practices that will bring about a reduction of certain "off" grades of preventably low quality. Grain standards function as commercial measures of quality and condition. They assist in the economical marketing of grain because their use reduces risks and promotes definite agreements between contracting parties.³

I. DEVELOPMENT OF GRAIN GRADING

As the mid-west prairies and the Mississippi Valley were gradually brought under cultivation, an increasing quantity of surplus grain moved eastward to consuming centers and to the eastern seaboard by rail, river, canal, and lake. There was a need for a readily understandable commercial language to express the quality, class, and condition of individual lots of grain so that buyers and sellers at separate points could trade without a personal inspection

³United States Department of Agriculture, Agriculture Handbook Number 59, Grain Grading Primer (Washington: Government Printing Office, 1953), p. 4.

of the grain itself. Therefore, grain trade organizations instituted a system of grain grading whereby grain could be bought and sold by grade without having the grain or samples of it before the interested parties.

Each trade organization adopted its own set of standards and method of application. The grades themselves were set forth in rather ambiguous terms such as "dry," "damp," "plump," "well-cleaned," "unsound," and "unmerchantable".⁴ In some markets different interests favored different kinds of grain standards. Millers generally preferred high standards, whereas some others frequently favored more liberal standards, leniently applied. Persons buying grain under a certain designation in one market could not be sure that the grain would receive the same grade designation in some other market. Exporters who bought grain at interior markets for delivery abroad had no assurance that the grain bought by grade at interior points would be assigned the same grade when loaded aboard ship for export. Indefinite grading and the lack of confidence in grain grading had a tendency to depress prices of grain sold by grade, especially if delivery was to be made at some distant future date.

For many years grain organizations tried to bring about a more consistent application of uniform standards.

⁴Ibid., pp. 2-3.

The demand for uniform grades and inspection resulted in many bills being introduced in the United States Congress during the years 1903 to 1916 providing for Federal supervision of grain grading or for outright Federal grain inspection. Finally, the United States Grain Standards Act was passed August 11, 1916. It provides in part for the establishment of official grain standards, Federal licensing and supervision of the work of grain inspectors, and the entertaining of appeals from the grades assigned by the licensed inspectors.⁵

II. GRAIN GRADING FACTORS

Some of the tests of grain quality that are considered to be important are tests for cleanliness, soundness, dryness, purity of type, plumpness, and the general condition of the grain.

Various tests have been devised for determining these quality factors for grain. Some of the factors can be measured with mechanical devices, whereas others, such as odor and class, for example, must be determined by the grain grader mainly without the aid of mechanical means.

Cleanliness is measured by determining the foreign material content. This is known as dockage testing, and it is performed by the use of appropriate sieves and cleaning

⁵Ibid.

devices. Plumpness is measured by the weight-per-bushel test, supplemented by sizing tests for some grains. Soundness is indicated by the absence of musty, sour, or commercially objectionable foreign odors, and by the quantity of damaged kernels that are present in the grain. Dryness is determined by making a moisture test. An electric moisture meter is widely used for making this test.⁶ Purity of type is provided for by classes for the various grain and by limitations for admixtures of other grains or of other classes of the same grain. The general term "condition" refers to whether the grain is in sound condition or is out of condition because it is musty, sour, or heating. The condition of grain is also indicated by such designations as "garlicky," "smutty," "weevily," and "bright."

Grain classes and sub-classes are also factors which are considered in grading grain. Some kinds of grain have several classes and sub-classes. Wheat, for example, is divided into seven classes, some of which have as many as three sub-classes.⁷

The protein content of wheat has begun to receive attention from consumers and the grain trade. Although it

⁶Ibid., pp. 5-27.

⁷United States Department of Agriculture, Agricultural Marketing Service, Grain Division, Official Grain Standards of the United States (Washington: Government Printing Office, 1957), p. 1.

is not a grade factor for wheat, it is quoted and priced separately. The premium paid for high-protein wheat is based on the percentage of protein contained in the wheat, not for protein by weight.⁸

At the country grain elevator level in the grain marketing channel, the testing for grade factors is usually performed by the elevator operator or his employee. Objective type tests for moisture and test-weight are usually made, but subjective tests are commonly used for the other grade factors. From a study made in 1955, Temple reported that 94 per cent of the country elevator operators indicated that they used objective methods for determining moisture content and test weight. A smaller percentage of the operators reported using objective tests for other grain grading factors such as damaged kernels, and foreign material.⁹ When the grain reaches terminal markets official grades are determined by licensed grain inspectors.

Practices in grain sampling. The first essential step in grading grain is to obtain a correct and representative sample of the lot of grain to be graded. At the

⁸Clive B. Harston, "Marketing High-Protein Wheat in the Northern Great Plains," Agricultural Economics Research, April, 1957, Agricultural Research Service, United States Department of Agriculture (Washington: Government Printing Office, 1957), pp. 54-62.

⁹Temple, op. cit., p. 72.

country grain elevator level it is at the discretion of the elevator operator whether or not to sample the loads of grain which he buys, and which sampling techniques he will use. Although he cannot assign an official grade to the grain that he buys, it is to his own advantage and in fairness to the producer of premium quality to sample and test it. Otherwise, should he buy grain with a high moisture content, he has the risk of loss due to spoilage. He will stand a loss from dockage when the grain is graded at the terminal market if it contains a large amount of foreign material. Thus, it is necessary for the elevator operator to sample and test grain in order to protect himself from financial loss and to encourage producers to improve the quality of their grain.

Regulations and instructions for grain sampling which are to be followed for determining the official grades are published by the Department of Agriculture, in its administration of the Grain Standards Act. The licensed grain inspector's sampling techniques must conform to these standards.¹⁰

Information which was obtained from this study of fifty-nine Missouri country grain elevators indicated that most of the loads of grain brought in by farmers were sampled. During harvest time it was reported that an average

¹⁰Official Grain Standards, op. cit., p. 84.

of about 80.7 per cent of the loads of corn arriving at these country elevators were sampled. The average percentage of the loads of wheat, soybeans, and oats that were sampled during harvest time were 96.0, 97.4, and 85.1 per cent, respectively. A slightly higher percentage of the loads of all these grains were reported to have been sampled when they were sold to the elevator after the harvest season was over.

Changes in grain grading practices since 1946. The fifty-nine Missouri country grain elevator operators who were interviewed for this study were asked to indicate whether grain grading practices in their locality had tightened, not changed, or had loosened over the past ten year period. This information is presented in Table XX. A majority of the elevator operators reported a tightening of grading practices for each of the major grains. However, it appeared that wheat and soybeans were particularly affected. No elevator operator reported a loosening of grading practices for any of the grains. Some of the elevator operators mentioned that the Pure Food and Drug Laws had tightened in respect to tolerance of rodent damage to grain which was to be used for human consumption. This would cause the elevator operator to tighten his grading practices concerning the foreign material content, particularly.

TABLE XX
CHANGES IN GRADING PRACTICES SINCE 1946 OF
FIFTY-NINE COUNTRY ELEVATORS
MISSOURI, 1956

Grain	<u>Elevators handling this grain</u>	<u>Changes in grading practices since 1946</u>		
		<u>Tightened</u>	<u>Not changed</u>	<u>Loosened</u>
		<u>(Number of elevators)</u>		
Corn	50	38	12	0
Wheat	53	49	4	0
Soybeans	43	38	5	0
Oats	42	26	16	0
Barley	11	7	4	0
Sorghum Grains	26	22	4	0

Grain merchandising practices. Blending, cleaning, scalping, and artificial drying are practices which are commonly performed in connection with grain merchandising. These conditioning processes are used in order to increase the value of the grain; or prevent deterioration in its quality.

In this study of fifty-nine Missouri country grain elevators, twenty-four were reported to be equipped to blend different qualities of grain. It was reported that approximately 12 per cent of the grain shipped by these country elevator operators was conditioned in some manner for shipment. About 88 per cent of the grain was reported to have been shipped as purchased.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The production and marketing of grain is one of the most important businesses in Missouri. In 1956 Missouri farmers received an income from the sale of grain of approximately \$252,713,000. This amount does not include the value of the grain marketed through livestock and livestock products.

Country grain elevators provide the sales outlet for about 80 to 90 per cent of the grain which farmers sell. Their pricing and trading practices are of much importance to the grain producer.

Missouri is an important producer of all of the major grains grown in the United States. In 1956 it ranked between fifth and ninth place among all states in the production of the seven major grain crops.

The state of Missouri is divided into nine Crop Reporting Districts. District I (Northwest) accounted for an average of about 20.6 per cent of the total grain produced in Missouri during the ten year period 1946 to 1955. This made it the leading grain producing District in Missouri. It was an especially important producer of corn. During this same ten year period, District VIII (South Central) accounted for the smallest average percentage of

the state's grain production, with approximately 2.9 per cent of the state's total.

The fifty-nine Missouri country grain elevators that were included in this study had an average storage capacity of 49,000 bushels. Their average volume of grain handled in 1956 was 243,000 bushels, thus the ratio of volume handled to storage capacity was approximately 4.9:1.

Information which was obtained for this study indicated that terminal quotations, and carlot dealers or brokers are the principal sources of pricing information for Missouri country grain elevator operators. The elevator operators who were interviewed reported that an average of approximately 86.9 per cent of the total bushels of grain which they bought was based on pricing information that was obtained from these agencies. They indicated that home offices were the source of about 5.3 per cent of their pricing information, with processors, truckers, and local feeders accounting for the remainder. There seemed to have been no significant changes in the sources of pricing information during the past ten years.

The fifty-nine Missouri country grain elevator operators who were interviewed for this study reported an average gross margin on rail shipments of corn, wheat, soybeans, and oats of 7.2 cents, 7.6 cents, 8.2 cents, and 6.7 cents per bushel, respectively. For truck shipments, the average gross margins were 7.7 cents, 7.4 cents, 7.5 cents,

and 7.5 cents per bushel for corn, wheat, soybeans, and oats, respectively. For local sales, an average gross margin of 8.8 cents per bushel was reported for corn, and 8.7 cents per bushel for oats. A majority of the elevator operators reported that there had been no change in their gross margins during the past ten years. Those who reported a change in their gross margins, almost without exception, indicated that they were now lower. Increased competition was usually reported as being responsible for this.

Terminal markets are the most important sales outlet for the grain sold by country grain elevator operators in Missouri. The elevator operators who were interviewed for this study reported an average of about 72.4 per cent of the total volume of all grain which they handled was sold to terminal or sub-terminal agencies. This percentage was higher for certain kinds of grain such as wheat, for example. Local sales to livestock feeders was an important sales outlet for oats. Other sales outlets reported by these elevator operators were processors, truckers, and exporters.

The elevator operators who were interviewed for this study reported rail shipment to be the most important method of transportation used for the grain which they sold. They indicated that an average of about 62.5 per cent of their total volume of grain was shipped by rail, 15.2 per cent by truck, and 11.4 per cent by barge. Approximately 10.9 per

cent of their grain was sold locally, in which case the livestock feeder would usually haul the grain to the farm himself.

Quality determination, or grading, is essential to the orderly marketing of grain. One important benefit of the standardization of grain grades is that it provides for the great economies of bulk storage. Official grades are assigned to grains by licensed inspectors, usually at major points of concentration, such as the terminal markets. At the country grain elevator level, tests for moisture and weight per bushel are the most common objective type tests that are made. However, information which was obtained from this study indicated that country grain elevator operators had tightened their grading practices, especially concerning foreign material, during the past ten years. Much work remains to be done in the field of refining commodity grades.

This study has been an attempt to make some contribution to the field of knowledge concerning the marketing of grain. It is realized by the writer that continuing effort must be exerted in this field in order that current information may be available relating to the dynamic situation that exists today in grain marketing.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Grain Marketing Efficiency, The Story of the Kansas City Board of Trade. Educational Committee, Kansas City Board of Trade, Kansas City, Missouri, 1954.
- Harston, Clive R., "Marketing High-Protein Wheat in the Northern Great Plains," Agricultural Economics Research, April, 1957.
- Kohls, Richard L. Marketing of Agricultural Products. New York: The Macmillan Company, 1955.
- Missouri Farm Census by Counties, 1946 to 1955, Missouri State Department of Agriculture, Jefferson City, Missouri.
- Ninety-Eighth Annual Report, Board of Trade of the City of Chicago. Chicago: Lincoln Printing Company, 1956.
- Ninety-Ninth Annual Report, Board of Trade of the City of Chicago. Chicago: Lincoln Printing Company, 1957.
- Temple, Norman F. "Characteristics of Country Elevators in Missouri as They Relate to Grain Marketing." Unpublished Master's thesis, University of Missouri, Columbia, 1955.
- Thomsen, Frederick L., and Foote, Richard J. Agricultural Prices. New York: McGraw-Hill Book Company, Inc., 1952.
- United States Department of Agriculture, Agricultural Handbook Number 59, Grain Grading Primer. Washington: Government Printing Office, 1953.
- United States Department of Agriculture, Agricultural Statistics 1953, and 1956. Washington: Government Printing Office.
- United States Department of Agriculture, Agricultural Marketing Service, Washington, D. C. Crop Production, July, 1957, and October 1957.

United States Department of Agriculture, Agricultural Marketing Service, Grain Division, Washington, D. C. Grain Market News, February 3, April 6, June 1, August 3, and October 5, 1956; January 4, April 5, July 5, and July 12, 1957.

United States Department of Agriculture, Agricultural Marketing Service, Grain Division. Official Grain Standards of the United States. Washington: Government Printing Office, 1957.

United States Department of Agriculture, Agricultural Marketing Service, Agricultural Economics Division. Statistical Bulletin Number 159, Grain and Feed Statistics. Washington: Government Printing Office, 1957.

United States Department of Agriculture. The Yearbook of Agriculture: 1954. Marketing. Washington: Government Printing Office, 1954.

APPENDIX

TABLE I

AVERAGE PRICE PER BUSHEL RECEIVED BY FARMERS, AND AVERAGE PRICE
PER BUSHEL PAID AT A TERMINAL MARKET FOR CORN, 1946 - 1956
(Dollars per bushel)

Missouri Crop Reporting Districts*										Mo.**	U.S.***	Kans. C.
										State	Av.	Term.***
Year	I	II	III	IV	V	VI	VII	VIII	IX	Av.		Av.
1946	\$1.38	\$1.35	\$1.39	\$1.38	\$1.49	\$1.41	\$1.47	\$1.54	\$1.40	\$1.41	\$1.41	\$1.49
1947	1.93	1.89	1.91	1.90	1.94	1.91	1.91	1.90	1.78	1.91	1.87	2.03
1948	1.93	1.96	1.99	1.90	2.01	1.99	1.93	1.99	1.92	1.96	1.88	2.01
1949	1.17	1.13	1.13	1.17	1.23	1.18	1.23	1.23	1.19	1.17	1.17	1.31
1950	1.32	1.29	1.30	1.35	1.36	1.35	1.36	1.38	1.37	1.33	1.33	1.43
1951	1.66	1.63	1.62	1.68	1.70	1.68	1.69	1.63	1.66	1.66	1.62	1.76
1952	1.73	1.71	1.65	1.78	1.77	1.71	1.76	1.73	1.74	1.73	1.64	1.81
1953	1.44	1.41	1.43	1.45	1.47	1.44	1.53	1.52	1.52	1.45	1.44	1.58
1954	1.50	1.52	1.49	1.54	1.54	1.53	1.56	1.54	1.48	1.52	1.46	1.59
1955	1.38	1.33	1.31	1.39	1.40	1.36	1.44	1.42	1.34	1.37	1.30	1.48
1956	1.35	1.28	1.26	1.32	1.31	1.26	1.39	1.32	1.26	1.30	1.30	1.50
11 yr.												
Av.	\$1.526	\$1.500	\$1.498	\$1.533	\$1.565	\$1.529	\$1.570	\$1.564	\$1.515	\$1.528	\$1.493	\$1.635

*State Agricultural Statistician. Simple average of monthly prices.

**USDA, AMS, Grain and Feed Statistics Through 1956, Statistical Bulletin No. 159
(Washington: Government Printing Office, 1957), p. 37. Crop year average by States,
weighted by sales to obtain weighted average for the U. S.

***USDA, AMS, Grain Market News, October 5, 1956 and April 5, 1957. Simple average
of daily closing cash prices at Kansas City for No. 2 Yellow Corn.

TABLE II

AVERAGE PRICE PER BUSHEL RECEIVED BY FARMERS, AND AVERAGE PRICE
PER BUSHEL PAID AT A TERMINAL MARKET FOR WHEAT, 1946 - 1956
(Dollars per bushel)

Year	Missouri Crop Reporting Districts*									Mo.* State Av.	U.S.** Av.	Kans. C. Term.*** Av.
	I	II	III	IV	V	VI	VII	VIII	IX			
1946	\$1.77	\$1.78	\$1.79	\$1.77	\$1.81	\$1.84	\$1.78	\$1.85	\$1.86	\$1.81	\$1.74	\$1.89
1947	2.38	2.41	2.42	2.38	2.40	2.47	2.34	2.41	2.44	2.41	2.35	2.56
1948	2.24	2.19	2.24	2.17	2.18	2.23	2.14	2.27	2.25	2.21	2.15	2.34
1949	1.93	1.87	1.90	1.92	1.87	1.90	1.87	1.88	1.95	1.90	1.92	2.16
1950	2.02	1.94	1.97	1.99	1.93	1.98	1.97	1.96	2.01	1.98	1.96	2.23
1951	2.19	2.13	2.15	2.14	2.10	2.16	2.17	2.10	2.17	2.15	2.12	2.40
1952	2.18	2.12	2.13	2.16	2.07	2.11	2.17	2.08	2.15	2.14	2.12	2.40
1953	2.01	1.93	1.88	2.00	1.87	1.87	1.98	1.89	1.88	1.94	1.99	2.26
1954	2.06	1.95	1.94	2.04	1.90	1.94	2.03	1.88	1.91	1.98	2.05	2.32
1955	2.03	1.96	1.89	2.01	1.91	1.88	1.98	1.87	1.91	1.96	2.02	2.25
1956	2.01	1.95	1.93	1.99	1.88	1.95	1.95	1.85	1.95	1.95	1.98	2.22
11 yr. Av.	\$2.075	\$2.021	\$2.022	\$2.052	\$1.993	\$2.030	\$2.035	\$2.004	\$2.044	\$2.039	\$2.036	\$2.275

*State Agricultural Statistician. Simple average of monthly prices.

**USDA, AMS, Grain Market News, July 12, 1957.

***USDA, AMS, Grain Market News, July 5, 1957. Simple average of daily closing cash prices at Kansas City for No. 2 Hard Red Winter, Ordinary Protein Wheat.

TABLE III

AVERAGE PRICE PER BUSHEL RECEIVED BY FARMERS, AND AVERAGE PRICE
PER BUSHEL PAID AT A TERMINAL MARKET FOR SOYBEANS, 1946 - 1956
(Dollars per bushel)

Year	Missouri Crop Reporting Districts*									Mo.* State Av.	U.S.** Av.	Chicago Term.*** Av.
	I	II	III	IV	V	VI	VII	VIII	IX			
1946	\$2.31	\$2.33	\$2.36	\$2.36	\$2.51	\$2.21	\$2.43	\$2.67	\$2.46	\$2.39	\$2.71	\$3.19
1947	3.34	3.24	3.30	3.24	3.24	3.10	3.22	2.94	3.09	3.18	3.23	3.46
1948	2.97	3.10	3.19	2.92	3.19	3.10	3.05	3.33	3.00	3.02	3.13	3.43
1949	2.16	2.10	2.15	2.15	2.17	2.12	2.11	2.16	2.10	2.12	2.16	2.46
1950	2.39	2.38	2.44	2.43	2.41	2.41	2.46	2.48	2.38	2.40	2.44	2.74
1951	2.82	2.84	2.89	2.81	2.85	2.87	2.83	2.89	2.84	2.86	2.89	3.12
1952	2.78	2.81	2.87	2.78	2.81	2.83	2.76	2.90	2.78	2.81	2.82	3.07
1953	2.56	2.57	2.65	2.53	2.55	2.56	2.50	2.69	2.61	2.59	2.61	2.86
1954	2.94	2.99	3.07	2.97	2.97	3.00	2.78	2.83	2.95	2.97	3.04	3.32
1955	2.50	2.26	2.34	2.24	2.23	2.25	2.26	2.34	2.30	2.28	2.29	2.50
1956	2.36	2.36	2.44	2.31	2.29	2.34	2.29	2.41	2.38	2.37	2.40	2.63
11 yr. Av.	\$2.648	\$2.635	\$2.700	\$2.613	\$2.656	\$2.617	\$2.608	\$2.695	\$2.626	\$2.635	\$2.702	\$2.980

*State Agricultural Statistician. Simple average of monthly prices.

**Board of Trade Chicago, 1955 Statistics, p. 71 for 1946 to 1955, inclusive. USDA, AMS, Grain Market News, February 3, April 6, June 1, August 3, October 5, 1956, and January 4, 1957 for the year 1956.

***USDA, AMS, Grain Market News, October 5, 1956 and April 5, 1957, p. 9. Simple average of daily closing cash prices for No. 1 Yellow Soybeans (prior to October 1953, quotations were based on No. 2 Yellow Soybeans).

TABLE IV

AVERAGE PRICE PER BUSHEL RECEIVED BY FARMERS, AND AVERAGE PRICE
PER BUSHEL PAID AT A TERMINAL MARKET FOR OATS, 1946 - 1956
(Dollars per bushel)

Year	Missouri Crop Reporting Districts*									Mo.** State Av.	U.S.** Av.	Kans. C. Term.*** Av.
	I	II	III	IV	V	VI	VII	VIII	IX			
1946	\$.79	\$.78	\$.79	\$.78	\$.85	\$.84	\$.84	\$.94	\$.84	\$.81	\$.77	\$.84
1947	.97	.96	.97	.95	1.00	1.00	.97	1.02	.94	.97	1.23	1.04
1948	.99	1.00	.95	.95	1.03	1.02	.96	1.07	.96	.99	.94	1.04
1949	.68	.66	.61	.66	.71	.71	.68	.76	.70	.68	.66	.74
1950	.77	.73	.72	.75	.79	.79	.75	.81	.79	.76	.76	.85
1951	.92	.88	.83	.88	.93	.92	.89	.93	.86	.89	.86	.98
1952	.92	.89	.86	.93	.97	.91	.88	.99	.90	.92	.84	.95
1953	.80	.81	.77	.80	.84	.81	.80	.86	.81	.81	.75	.84
1954	.80	.79	.75	.74	.79	.79	.77	.87	.75	.78	.74	.83
1955	.70	.65	.62	.66	.71	.69	.69	.74	.65	.68	.66	.73
1956	.70	.67	.61	.64	.69	.64	.68	.72	.66	.67	.66	.76
11 yr. Av.	\$.822	\$.802	\$.771	\$.795	\$.846	\$.829	\$.810	\$.883	\$.805	\$.815	\$.806	\$.873

*State Agricultural Statistician. Simple average of monthly prices.

**USDA, AMS, Grain and Feed Statistics Through 1956, Statistical Bulletin Number 159, (Washington: Government Printing Office, 1957), p. 39.

***USDA, AMS, Grain Market News, July 5, 1957. Simple average of daily closing cash prices at Kansas City for No. 2 White Oats.

TABLE V
PER CENT OF GRAIN SOLD FROM THE FARM, 1955*

Grain	Missouri (Per cent)	United States (Per cent)
Corn	26.0	31.1
Wheat	89.6	89.7
Oats	19.0	25.2
Soybeans	96.1	95.2
Barley	17.0	63.6
Sorghum Grains	44.0	74.8
Rye	62.2	73.9
Weighted Average, all grains	41.9	45.0

*Agricultural Statistics 1956, United States Department of Agriculture, Washington, D. C.

TABLE VI
PER CENT OF THE STATE'S TOTAL NUMBER OF EACH CLASS OF
LIVESTOCK IN EACH DISTRICT, MISSOURI, JANUARY 1, 1956*

District	All Cattle (per cent)	Hogs (per cent)	Stock Sheep (per cent)	Chickens (per cent)
I (Northwest)	16.4	26.6	21.1	13.8
II (North Central)	11.7	12.2	27.3	11.9
III (Northeast)	8.8	13.0	17.0	9.6
IV (West)	11.6	9.6	8.8	12.8
V (Central)	18.7	14.8	12.6	16.8
VI (East)	8.1	10.0	3.3	12.4
VII (Southwest)	10.4	3.2	6.9	9.0
VIII (South Central)	10.3	5.3	2.5	7.9
IX (Southeast)	4.0	5.3	.5	5.8
State Total (per cent)	100.0	100.0	100.0	100.0
State Total (head)	4,027,000	3,819,000	749,000	14,555,000

*State Agricultural Statistician.

University Libraries
University of Missouri

Digitization Information for Theses and Dissertations project.
Scanned from microfilm; no subsequent editing done.

Local identifier

Source information

Identifier	Microfilm reel# T1958-59-T1958-70
Format	Microfilm
Content type	Text
Notes	

Capture information

Date captured	2019
Scanner manufacturer/model	ScanPro 3000 /e-ImageData
Scanning software	PowerScan 3000(TM) v5.341
Optical resolution	600 dpi
Compression	LZW
Color settings	bitonal
File types	tiff
Notes	Scanned from microfilm; no editing done.

Derivatives - Access copy

Editing software	Photoshop
Resolution	600 dpi
Color	grayscale
File types	pdf
Notes	Converted from tiff to pdf using Adobe Acrobat Pro DC.