

# Some Effects of Wheat Policy On The Oklahoma Wheat Marketing Industry

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February 1959  
Bulletin B-521

## CONTENTS

Introduction	5
Utilization of United States Wheat	5
Domestic Utilization	5
Foreign Market	9
Wheat Supplies	10
Domestic Supplies	10
World Trade	11
United States Wheat Prices	11
Policy Effects on Wheat Marketing Firms	14
Production Effects	14
Storage-need Effects	16
Transportation Effects	18
Adjustments to Meet Policy Effects	18
Cost Adjustments	18
Margin Adjustments	20

## SUMMARY

The quantity of wheat grown in the United States during the past quarter-century has greatly exceeded domestic needs.

Exports have not been sufficient to prevent carry-over from increasing over a series of years.

Grain storage facilities were greatly expanded to handle increasingly larger wheat supplies, which reached a high of over 2 billion bushels in 1956-57 and 1958-59.

Agricultural policy is directed toward reducing wheat supplies which on July 1, 1958, were 2,337 million bushels, approximately four times the size of annual domestic requirements in the United States.

If wheat production is decreased, grain elevators will have less wheat to handle.

Since approximately two-thirds of grain elevator costs are fixed, their costs per bushel for handling and storing wheat will increase with declining volumes.

Elevator organizations will have to modify their operations if costs are to be covered as wheat volume declines.

# Some Effects of Wheat Policy On The Oklahoma Wheat Marketing Industry

Adlowe L. Larson and Nellis A. Briscoe

Wheat is an international crop, grown and consumed around the world. The United States Congress has enacted legislation affecting wheat in an effort to meet conditions in the over-all world market, and in this country as well.

Wheat is an important crop in Oklahoma. Average wheat production in the state for the ten-year period 1943 through 1952 was 76 million bushels. Average United States production in the same years was 1,122 million bushels. Average farm prices were \$1.84 per bushel for Oklahoma and \$1.85 for the United States.

This is the second of two bulletins concerned with government policy as related to the wheat industry. The first, entitled *Policies and Programs Affecting the Oklahoma Wheat Economy—1920-1957*, appeared as Oklahoma Experiment Station Bulletin Number B-501. The purpose of this second publication is to show changes which have occurred in the over-all wheat economy of Oklahoma and the United States for the quarter century ending in 1957, and to point out problems associated with these changes.

The study covered the following areas:

- (1) Characteristics of the market for wheat and of the wheat supply.
- (2) Relationships of changes in wheat supplies, utilization, and governmental policy to developments in the wheat marketing industry, including merchandising and storage.

## Utilization of United States Wheat

The total utilization of United States wheat varies considerably from year to year. The two major components of this utilization—domestic use and sale abroad—differ in their variation. The quantity of wheat used within the United States is relatively constant from year to year, whereas the amount exported varies greatly.

### Domestic Utilization

In the period from 1935-36 through 1956-57, the total annual domestic consumption of wheat ranged from a low of 568 million bushels in 1956-57 to a high of 1,174 million bushels in 1943-44 (Table 1). Except for the war years and immediately thereafter, the total domestic consumption ranged generally between 600 and 700 million bushels. Recently it has fallen below 600 million bushels.

**Table 1.—Supply and Disappearance of Wheat, United States, 1935-1957**

Year beginning July	Supply				Disappearance								
	Carry- over	Pro- duction	Imports	Total	Continental United States					Military procure- ment	Exports	Ship- men's	Total
					Pro- cessed for food	Seed	Indus- trial	Feed	Total				
	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>	<i>bushels</i>
1935	145,889	628,227	34,748	808,864	490,067	87,479	55	83,343	660,944	-----	4,440	3,047	668,431
1936	140,433	629,880	34,616	804,929	493,327	95,896	59	100,149	689,431	-----	9,584	3,072	702,087
1937	83,167	873,914	746	957,827	489,440	93,060	69	114,856	697,425	-----	103,889	3,406	804,720
1938	153,107	919,913	347	1,073,367	496,189	74,225	103	141,690	712,207	-----	108,082	3,063	823,352
1939	250,015	741,210	332	991,557	488,758	72,946	89	101,127	662,920	-----	45,258	3,658	711,836
1940	279,721	814,646	3,562	1,097,929	489,422	74,351	100	111,772	675,645	-----	33,866	3,685	713,195
1941	384,733	941,970	3,704	1,330,407	472,906	62,490	1,676	114,254	651,326	16,133	27,774	4,399	699,632
1942	630,775	969,381	1,127	1,601,283	494,971	65,487	54,437	305,771	920,666	25,245	30,960	5,515	982,386
1943	618,897	843,813	136,448	1,599,158	477,287	77,351	108,125	511,233	1,173,996	62,762	42,734	3,111	1,282,603
1944	316,555	1,060,111	42,384	1,419,050	472,675	80,463	83,132	300,095	936,365	150,147	49,106	4,252	1,139,870
1945	279,180	1,107,623	2,037	1,388,840	473,733	82,006	21,302	296,548	873,589	90,883	320,025	4,257	1,288,751
1946	100,086	1,152,118	84	1,252,288	479,361	86,823	58	177,525	743,767	92,459	328,045	4,180	1,168,451
1947	83,837	1,358,911	149	1,442,897	484,060	91,094	693	178,309	754,156	148,613	340,221	3,964	1,246,951
1948	195,943	1,294,911	1,530	1,492,384	471,483	95,015	193	105,348	672,039	181,518	327,827	3,715	1,185,099
1949	307,285	1,098,415	2,237	1,407,937	484,182	80,851	192	111,258	676,483	123,326	179,213	4,001	983,223
1950	424,714	1,019,344	11,919	1,455,977	479,550	87,904	192	108,808	676,454	41,267	334,513	3,872	1,056,105
1951	399,871	988,161	31,609	1,419,641	481,084	88,195	930	102,401	672,610	16,714	470,347	3,992	1,163,663
1952	255,978	1,306,440	21,602	1,584,020	473,613	89,091	175	82,480	645,359	13,620	315,652	3,845	978,476
1953	605,544	1,173,071	5,537	1,784,152	472,662	69,478	178	76,637	618,955	12,034	215,704	3,953	850,646
1954	933,506	983,900	4,197	1,921,603	473,033	64,781	230	60,090	598,134	9,882	273,419	3,990	885,425
1955	1,036,178	934,731	9,933	1,980,842	469,413	67,682	678	51,430	589,203	8,213	346,093	3,918	947,427
1956	1,033,415	997,207	8,000	2,038,622	468,231	56,929	497	42,500	568,157	8,636	549,432	4,040	1,130,265

Source: *The Wheat Situation*, Agricultural Marketing Service, United States Department of Agriculture, October, 1957, p. 16.

## Food Use

The use of wheat for food, which accounts for roughly three fourths of the domestic utilization, was stable in the period from 1935-36 to 1956-57, but showed a slight downward trend. The range was between a low of 468 million bushels in 1956-57 and a high of 496 million bushels in 1938-39. In recent years it has tended to average around 470 million bushels.

This constant to decreasing total consumption of wheat for food in the United States in face of an increasing population means that consumption per person is declining. Since 1909 it has declined from 5 bushels down to approximately 3 bushels per capita. A double question which constantly comes up in wheat circles is "What factors have caused this decline, and what can be done to stop or reverse the trend?"

While the factors responsible for this decline cannot be measured, they can be listed as cultural change, age composition, physical activity and weight consciousness. The eating habits of the people are a composite of multiple environments: those of this country, and those from the other areas from which many members of the population came. Many Americans and the forebearers of many Americans came from areas where starch was a major item in the diet. As they became adapted to eating habits here, their food preferences changed. The eating habits of their children have changed still more. Further accentuating this is the change toward a higher average age of the population and need for less starchy foods in the average diet.

Other factors responsible for lower per capita consumption of wheat include increasing mechanization of work and play, resulting in output of less physical effort with attendant smaller food intake.

Other foods have increased in usage while cereal grains have declined (Figure 1). The increase is particularly notable for fruits, vegetables, and dairy products. Health warnings have cautioned against excessive calorie intake, and less starchy foods have been promoted as being more healthful and more tasty. Weight and figure also are factors in cutting wheat consumption.

Bennett, of the Food Research Institute, reported that a country preferring wheat cereal but starting at a low standard of living may reach a per capita consumption of 6 to 8 bushels annually.<sup>1</sup> He estimated that with an increasing standard of living the consumption of wheat may go as low as 2 bushels per capita.

There is no certainty that the wheat producer is faced with declining per capita consumption of his product. Research related to consumer preferences might show that wheat products would be con-

<sup>1</sup> M. K. Bennett, "World Wheat Utilization Since 1885-86," *Wheat Studies*, Vol. 12, No. 10, Food Research Institute, Stanford University, California, June 1936, p. 379.

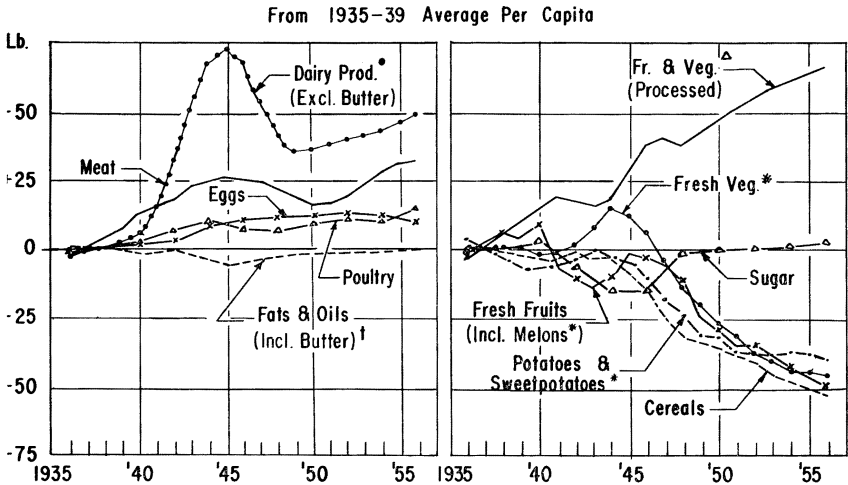


Figure 1. Per Capita Consumption of Food in the United States.

Source: *Outlook Charts*, 1958, United States Department of Agriculture, p. 18.

sumed in much greater quantities if provided in forms not now commonly used. An example is the sales made through bakeries providing a variety of bread and pastry specialty products.

## Non-Food Use

Uses other than for foods are feed, seed and industrial uses. The price of wheat is ordinarily too high—compared to feed grain prices—to permit much use of it for feed purposes. The volume of fed wheat is much greater than that now used industrially, however. In recent years it has been below 100 million bushels. The use for seed, as would be expected, is relatively constant from year to year and is quite closely related to the seeded acreage. Except for the war years, the use of wheat for industrial purposes (primarily manufacturing alcohol) was relatively unimportant; it has not exceeded 1 million bushels since the crop year of 1945-46.

## Foreign Market

To move United States wheat into world markets, subsidies of various forms have been necessary. Subsidies to wheat exported under the International Wheat Agreement, for example, have ranged mainly from 47 cents to 75 cents per bushel.<sup>1</sup> Except for such subsidies, United States wheat was priced out of the world market mainly because of price supports.

<sup>1</sup> *Grain Market News*, Agricultural Marketing Service, U. S. Department of Agriculture, October 19, 1956; and Kenneth W. Meinken, *The Demand and Price Structure for Wheat*, U. S. Department of Agriculture, Technical Bulletin No. 1136, p. 53.

Under the Wheat Agreement, which started in 1949, the volume of transactions has not equalled the agreed levels for United States wheat. For example, in 1949, the commitment was 236 million bushels while orders of 163 million bushels were placed to meet that commitment. The following year the agreed level of 248 million bushels was met. However, as time went along, the guaranteed commitments were not met. In 1953, transactions amounted to only 106 million bushels of the 194 million bushel commitment. In 1955-56, sales under the International Wheat Agreement approximated two thirds of the quota or commitment for the United States.

Wheat exports from the United States have varied greatly in quantity while domestic consumption has remained relatively constant (Figure 2). Since World War II, efforts approached or exceeded one-half billion bushels annually (including wheat for civilian need listed under "military procurement") in several years. Most of these exports were in the form of wheat; although late in World War II and just afterwards, relatively large quantities of wheat-flour were also exported. Exports were large in this period primarily because the agriculture of many countries was crippled by war and their need for wheat was great. However, as

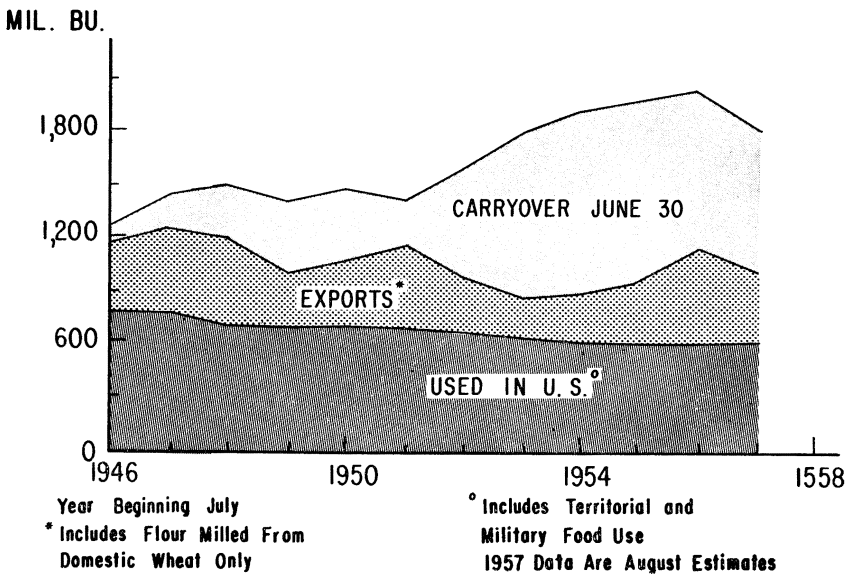


Figure 2. United States Wheat Utilization, Exports, and Carryover.

Source: *The Wheat Situation*, August, 1957, Agricultural Marketing Service, United States Department of Agriculture, p. 10.



the agriculture of these countries was rehabilitated, their need for foreign wheat decreased.

United States exports dropped to 216 million bushels in 1953-54, but increased to 346 million bushels in 1955-56 and 549 million bushels in 1956-57. The last figure was large because of unsatisfactory growing conditions and other factors in several areas of the world.

In 1955-56, approximately 70 percent of United States exports of food grains moved under some government agricultural surplus program. Of the total tonnage of food grain exports, 26 percent was sold to foreign countries as authorized by Public Law 480. Exchange of CCC stocks on a barter basis for stockpiling or governmental use accounted for 19 percent. Other sales aided by Mutual Security Act authorization and paid for by foreign currencies amounted to 20 percent of the United States food grain tonnage exports. Thus, the export of United States wheat was greatly dependent upon governmental aid programs.

## Wheat Supplies

Supplies of United States wheat have been greater than could be absorbed in the usual market channels. This situation brought in a number of government-directed programs which were discussed in the previous bulletin of this series.<sup>1</sup>

## Domestic Supplies

Since 1930, the production of wheat in the United States ranged from a low of 526 million bushels in 1934 to highs of 1,359 million bushels in 1947 and 1,421 million bushels in 1958. After 1944, production exceeded one billion bushels annually more often than it was less. This large excess over domestic requirements caused a great increase in the annual carryover of wheat in the United States.

Supplies on hand in the United States July 1 in recent years have been about three to four times the domestic requirements (Figure 2). For example, on July 1, 1956, supply was estimated at 2,039 million bushels—a new all-time record. On July 1, 1958, it was 2,337 million bushels. This was made up of a carryover from previous years of 881 million bushels, a new crop estimated at 1,446 million bushels, and imports of around 10 million bushels.

Most of the carryover was under the control of the Commodity Credit Corporation; it owned 828 million bushels. In addition, it had under loan as outstanding 25.2 million bushels of older wheat. Consequently, of the total carryover, only 27.3 million bushels were what is known as “free” wheat.

<sup>1</sup> Nellis A. Briscoe and Adlowe L. Larson, *Policies and Programs Affecting the Oklahoma Wheat Economy, 1920-1957*, Oklahoma Agricultural Experiment Station Bulletin No. B-501, January, 1958.

## World Trade

World trade in wheat in 1955-56 approximated 1,020 million bushels. This figure was 11 percent above the 1945-54 average and was slightly higher than might ordinarily be expected, principally because in some countries wheat supplies were below usual levels and in others crop prospects were poor.

Major exporting countries are Canada, United States, Australia, and Argentina (Figure 3). On July 1, 1956, total supplies of wheat for export and carryover in these four countries totaled 1,819 million bushels. World trade in wheat in 1956-57, however, did not nearly equal these total supplies available for export and carryover, although it did set a new record of 1,282 million bushels.

## United States Wheat Prices

The supply and demand conditions discussed above are major factors affecting wheat prices. In most cases, these conditions are resultants of many influencing factors. Significant, however, are their resulting effects upon prices (Figure 4).

The price support program, through Commodity Credit loans, places a floor, although not a rigid one, under wheat prices. When the demand for wheat was exceptionally strong, such as during the

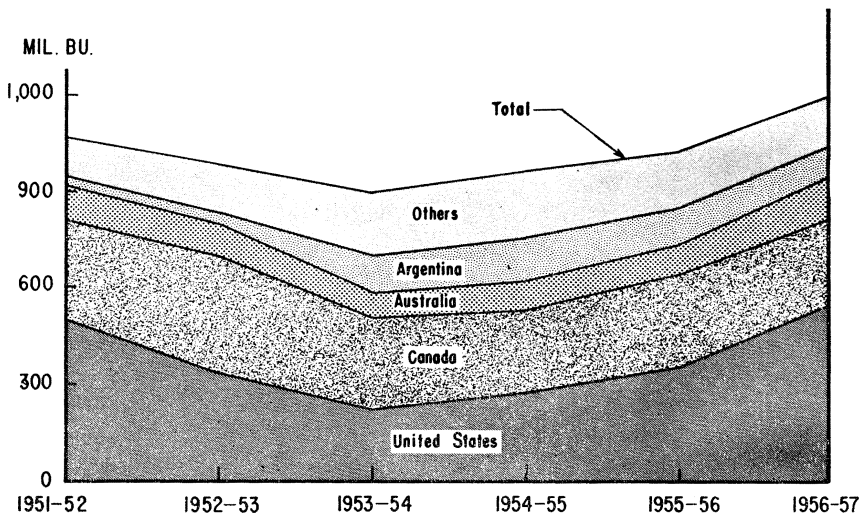


Figure 3. World Wheat Exports.

Source: *The Wheat Situation*, October, 1957, Agricultural Marketing Service, United States Department of Agriculture, Front cover.

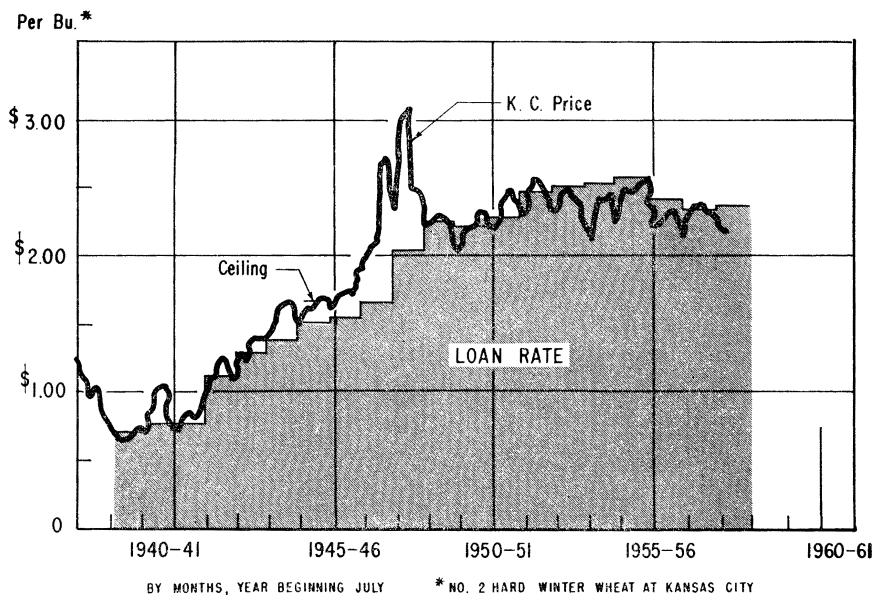


Figure 4. Wheat Loan Rate and Market Price.

Source: *Outlook Charts*, 1958, United States Department of Agriculture, p. 62.

World War II years and immediately after, the price of wheat was considerably above the loan rate. During the marketing years of 1946-47 and 1947-48, they reached highest levels when prices received by farmers for wheat were 115 and 113 percent of parity, respectively. However, when increased foreign production resulted in a decline in United States exports of wheat, prices in the United States declined to approximately the loan rate. At the same time, wheat supplies continued to increase.

Table 2 shows some of the price support operations for wheat from 1938 through 1958. The first loan program for wheat was offered for the 1938 crop, and a loan program has been in effect for each crop since that date. The Agricultural Adjustment Act of 1938 made it mandatory under certain conditions for the Commodity Credit Corporation to make available to cooperators loans upon wheat at prices ranging from 52 to 75 percent of the parity price at the beginning of the marketing year. In 1941 the support rate was raised to 85 percent of parity; from 1944 through 1954, loans were offered at 90 percent of parity; and from 1955 on, support rates at successively lower levels were in effect.

Exceptionally large quantities of wheat were under price support loans during the marketing years 1948 through 1955. This was mainly

Table 2.—United States Price Support Operations for Wheat, 1932-1958.

Year Beginning July 1	Production (All Wheat) (1000 bu.)	Percent of Crop Under Price-Support (Percent)	National Average Price Support Level			National Average Price Received by Farmers Compared with Parity	
			Parity for Price Support (Dollars)	Support Rate as Percent of Parity (Percent)	Support Rate per Bushel (Dollars)	Season Average Price Received by Farmers (Dollars)	Price Received by Farmers as Percent of Parity (Percent)
1932-33	756,307		1.10			.375	34
1933-34	552,215		.911			.736	81
1934-35	526,052		1.08			.839	78
1935-36	628,227		1.12			.827	74
1936-37	629,880		1.10			1.02	93
1937-38	873,914		1.21			.959	79
1938-39	919,913	9.3	1.14	52	.59	.556	49
1939-40	741,210	22.6	1.12	56	.63	.686	61
1940-41	814,646	34.2	1.13	57	.64	.674	60
1941-42	941,970	38.9	1.15	85	.98	.939	82
1942-43	969,381	42.1	1.34	85	1.14	1.09	81
1943-44	843,813	15.4	1.45	85	1.23	1.35	93
1944-45	1,060,111	17.0	1.50	90	1.35	1.41	94
1945-46	1,107,623	5.4	1.53	90	1.38	1.49	97
1946-47	1,152,118	1.9	1.65	90	1.49	1.90	115
1947-48	1,358,911	2.3	2.03	90	1.84	2.29	113
1948-49	1,294,911	28.3	2.22	90	2.00	1.98	89
1949-50	1,098,415	34.7	2.17	90	1.95	1.88	87
1950-51	1,019,344	19.3	2.21	90	1.99	2.00	90
1951-52	988,161	21.5	2.42	90	2.18	2.11	87
1952-53	1,306,440	35.2	2.45	90	2.20	2.09	85
1953-54	1,173,071	47.5	2.46	90	2.21	2.04	83
1954-55	983,900	43.8	2.49	90	2.24	2.12	85
1955-56	934,731	34.3	2.52	82.5	2.08	1.99	79
1956-57	997,207	25.4	2.42	82.6	2.00	1.97	81
1957-58	927,324		2.51	79.7	2.00		
1958-59			2.37*	75*	1.78*		

\* \$2.37 is estimated transitional parity on July 1, 1958. \$1.78 is minimum 1958 support and will be increased if combination of 75 percent of parity on July 1, 1958 being greater and the supply percentage on that date being less indicates a higher level.  
Source: Grain Division, Commodity Stabilization Service, United States Department of Agriculture, November, 1957.

the result of relatively large production in these years and a decline in export demand for United States wheat. Export demand was exceptionally low in 1953 and 1954 (see Table 1). From 1938 through 1955, almost 4.7 billion bushels of wheat were placed under price support. The largest price support operation during these marketing years was in 1953-54 when 555 million bushels, nearly one half of the total crop, was placed under loan and purchase agreements.

## Policy Effects on Wheat Marketing Firms

Government wheat policy has affected the development and operations of wheat elevators in Oklahoma and likely will continue to do so for some time. In the period of years in which wheat supplies were being increased from year to year as a result of a series of crops regularly greater than the amount consumed and exported, there was a continual pressure to find space to put wheat. There was a market for almost any kind of wheat storage. To secure a wheat loan, the farmer needed to have his wheat placed in approved storage facilities, either on the farm or off. Oklahoma farmers, in the main, preferred commercial elevator storage to farm storage if commercial storage were available. A survey of farmers and elevators in Oklahoma showed the two following conclusions:<sup>1</sup>

- (1) For farmers constructing new storage, the average annual cost of storing cash grain on the farm was 53 percent higher than at country elevators.
- (2) In the average case, if commercial storage were available, it did not pay the farmer to use his own farm storage already constructed, or to use farm storage bins that might be provided free to him.

## Production Effects

Wheat allotments, production, and yields vary considerably in the various wheat producing areas (Appendix A). To determine if the various parts of the state are affected differently, a comparison was made of wheat acreages and production for selected wheat producing areas A, B, C, and D (Figure 5). These areas covered the entire northern part of Oklahoma with the exception of one county, Osage, which is almost exclusively a ranching area.

Area A may be described as chiefly cash grain and livestock; area B, as having some small grains, feed crops, and livestock; area C, grain and general farming; and area D, general farming. Annual precipitation ranges from approximately 17 inches in the western part of the state to 45 inches in the eastern part. However, there is considerable annual variation.<sup>2</sup>

<sup>1</sup> Adlowe L. Larson, Thomas E. Hall, Howard S. Whitney, and Charles H. Myer, *Comparative Cost of Grain Storage on Farms and in Elevators*, Oklahoma Agricultural Experiment Station Bulletin No. B-349, p. 5.

<sup>2</sup> "Climate and Man," *1941 Yearbook of Agriculture*, United States Department of Agriculture.

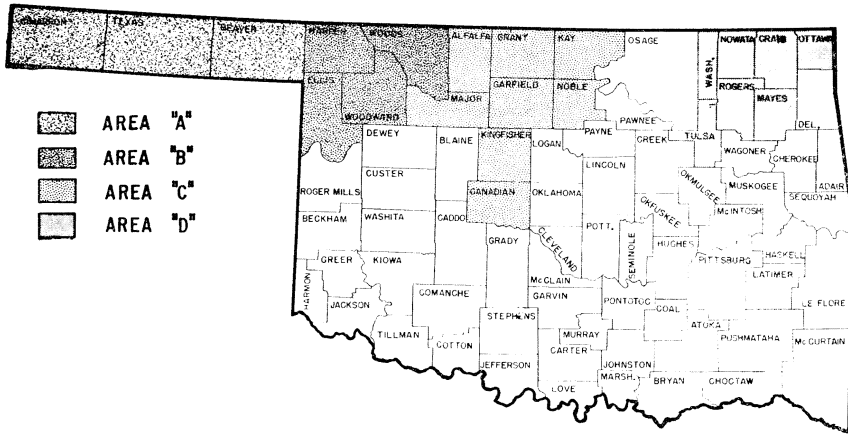


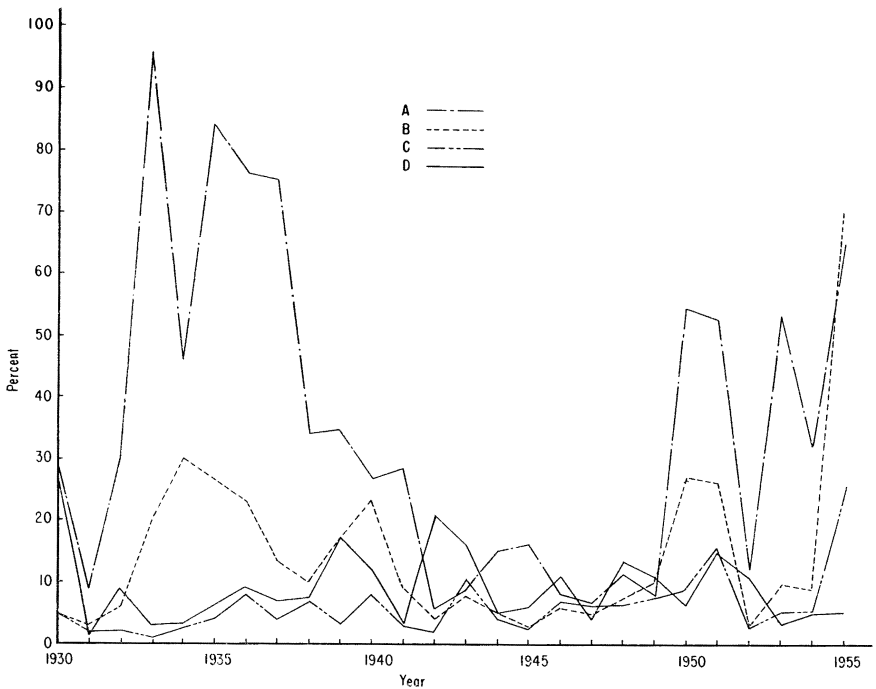
Figure 5. Selected Wheat Producing Areas in Oklahoma.

The data on production and acreage showed the effects of two major influences: weather and governmental programs. Weather hazards brought about great variations in yield in the western areas of the state, with large acreage abandonments and fluctuating planting acreages (Figure 6, Table 3, and Appendix B).

Data for the four areas were compared to see if the programs that brought about decreases in acreage in some areas were responsible for increases in others.<sup>1</sup> This was in view of the fact that producers of 15 acres of wheat or less were not subject to acreage restrictions. The declines in planted acreages shown suggest that areas A, B, and C have responded in part to government programs. It is not, however, possible to separate effects of weather and acreage controls on wheat production. There was an increase of planted acreage, but not a marked one, in area D where it might be expected that increases would result from a number of acreages of 15 acres or less. Preventing the over-all figure from showing a greater increase are such factors as a declining number of farms, the shifting from wheat production by some producers, and the small total amount of the 15-acre plots in comparison with allotments. Although the size of the increase in area D is small, and not as great as was expected, it does indicate a situation existing in the wheat industry.

If these production shifts are of major magnitude, they will have a significant impact on marketing agencies in the area, as well as on other related segments of the economy. Marketing agencies operate at

<sup>1</sup> Acreage allotments were not in effect for the crops of 1943 through 1953 except for 1950. See Appendix C for years allotments and quotas were in effect.



**Figure 6. Percent of Seeded Acreage of Wheat Not Harvested, Wheat Producing Areas A, B, C and D, Oklahoma, 1930-1955.**

less than capacity with resulting higher unit costs of operation in an area having a decline in production. There is, however, an opposite impact in an area in which more wheat is grown as a result of stimulation from cuts in wheat acreage elsewhere. In the latter case, it becomes necessary to develop new marketing agencies, such as new elevators. The market may be less competitive than other areas where wheat has been regularly grown in large amounts.

### Storage-need Effects

In some years and areas when storage space was not available, prices received by farmers for wheat were considerably depressed below the level that might have been received if the wheat were placed under government loan. To provide farmers the opportunity for storage, large amounts of elevator space have been built in the state. The bulk grain storage space in Oklahoma increased from 41.9 million bushels in 1942 to 138.4 million bushels in 1955. Presently existing storage space will handle approximately two average Oklahoma wheat crops. Its being

Table 3.—Wheat Acreage Not Harvested, Selected Oklahoma Wheat Producing Areas, 1930-1955

Year Beginning July 1	Area A		Area B		Area C		Area D	
	No <sup>+</sup> Acres Harvested	Percent of Seeded Acreage	No <sup>+</sup> Acres Harvested	Percent of Seeded Acreage	No <sup>+</sup> Acres Harvested	Percent of Seeded Acreage	No <sup>+</sup> Acres Harvested	Percent of Seeded Acreage
1930	355,000	29.2	36,000	5.0	80,300	5.0	16,400	28.0
1931	91,900	7.6	25,700	3.7	38,600	2.6	800	1.9
1932	321,500	28.4	40,400	6.0	33,800	2.4	5,900	9.4
1933	1,125,000	95.3	134,000	20.6	15,400	1.1	1,500	3.2
1934	498,000	46.7	181,100	30.2	31,700	2.2	2,100	3.9
1935	952,000	84.5	180,800	27.0	65,500	4.2	5,500	6.7
1936	534,600	76.6	165,000	23.1	143,000	8.5	10,500	9.7
1937	745,000	75.9	111,000	13.9	85,000	4.3	11,000	7.1
1938	208,300	33.2	81,900	10.0	127,400	6.0	16,500	7.9
1939	242,000	34.0	104,000	17.2	68,000	3.7	23,600	17.7
1940	183,000	27.5	115,500	23.5	155,000	8.3	11,300	12.6
1941	226,000	28.0	55,000	9.3	65,000	3.5	3,200	3.6
1942	47,000	6.1	21,000	4.0	38,000	2.7	16,700	21.3
1943	72,000	9.5	43,000	8.1	144,100	10.5	10,700	16.5
1944	148,000	15.8	38,000	5.5	96,500	5.1	5,400	5.9
1945	167,000	16.8	27,000	3.6	77,000	3.7	7,200	6.3
1946	93,000	8.4	50,000	6.3	134,000	6.5	11,100	11.4
1947	93,000	7.4	44,000	5.2	140,000	6.4	3,900	4.9
1948	144,000	11.2	75,000	8.9	146,000	6.5	12,400	13.8
1949	120,000	8.9	87,000	10.1	179,000	7.8	9,500	11.5
1950	572,000	54.0	192,000	27.2	188,000	9.9	5,200	7.4
1951	605,000	52.2	184,000	26.4	322,000	15.9	11,000	15.1
1952	139,000	12.8	27,000	3.8	81,000	3.8	9,200	11.8
1953	596,000	53.0	80,000	10.7	122,000	5.4	3,600	3.3
1954	293,000	32.2	57,500	9.8	87,200	5.2	4,300	5.4
1955	531,000	62.5	378,000	70.9	410,000	26.0	5,300	5.4



filled, therefore, is dependent upon the carrying over from one season to the next of large quantities of wheat.

A question of concern to many is "What is the likelihood of being able to keep these elevators full or nearly so in the future?" As a result of government programs aimed at production restriction, both Oklahoma and national production will tend to decline. This would reduce requirements for wheat storage facilities over the nation as a whole. If excess storage capacity becomes available, storage space near the farmer end of the wheat marketing channel would tend to be filled more than that at greater distances, if storage costs are comparable. This could lead to price cutting in storage charges, which would be detrimental to all firms and could be ruinous to some.

Elevators in Oklahoma may have location and cost advantages over elevators in some other areas. If other cost items are in line, elevators located in a major wheat producing area may expect to be filled as quickly as those elsewhere. In addition, many of the facilities in the Southwest were constructed at lower costs and also have lower costs of operation than do those in some other areas. It is reasonable to expect, therefore, that elevators in this area should be able to meet, if not exceed, the competition of elevators in most other sections of the country.

## **Transportation Effects**

Transportation changes in the next few years, in part the result of governmental policy, will affect the entire wheat economy. Opening of the St. Lawrence Waterway to ocean-going ships will affect the normal flow of wheat to market. Since water transportation is generally cheaper than rail, some areas will secure lower transportation rates and resultant trade advantages. Of current importance is the effect of the increasing use of trucks in the transportation of wheat. In much of the wheat area, truck transportation is cheaper than rail transportation; and the advantage of rail transportation of wheat will be further reduced if rail rates are increased relative to trucking rates. Impacts of this trucking movement may bring significant changes in the operation of elevators. In trucking, there are no transit rates which in the movement of wheat by rail results in benefits to subterminal and terminal elevators.<sup>1</sup> This could result in some elevators being bypassed, and wheat being trucked straight through from the production point to the major market point.

## **Adjustments to Meet Policy Effects**

### **Cost Adjustments**

Some contraction in merchandising volume as well as storage volume seems to be in prospect for Oklahoma elevators if production

<sup>1</sup> For example, by the transit privilege a shipment from Alva, Oklahoma, to Enid, Oklahoma, may be reshipped to a Texas Gulf point by payment of the difference between the local rate from Alva to Enid and the through rate from Alva to the Gulf point.

is decreased. Individual firms will need to analyze their own operations to meet these changes. They will need to see how their costs of operation will be affected by changes in volume, and what adjustments they can make in expenses. They may find it necessary to make some adjustments in margins charged for merchandising and for storage. They may also find it necessary to add other lines of activity.

## **Cost Size**

The importance of different elevator expenses is shown by the fact that in 1946-48 total expenses for single-unit elevators were 3.55 cents per bushel handled.<sup>1</sup> Salaries and wages accounted for 1.49 cents. Smaller amounts of .77 cent were for facility and inventory expenses, .61 cent for interest, and .68 cent for operational expenses.

The nature of costs of elevator operation determines the extent to which adjustments in costs of operation can be adjusted to changes in volume. As far as day-to-day operation is concerned, almost all costs are completely fixed; that is, they cannot be changed at the moment. However, as days and weeks become available for future planning, some adjustments in cost can be made.<sup>2</sup> In the long run, all costs can be modified—if, for example, one wants to cease operations of a firm and sell out.

## **Fixed Costs**

It is not, however, at either of these extremes that the elevator operates. The firm expects to continue in operation, and because it does, many costs must be continued. The costs which are ordinarily thought of as being the most rigid or fixed are those for interest on money invested and for taxes and insurance. A study of a number of single-unit elevators in Oklahoma showed that facility and inventory expenses were 89 percent fixed when the planning period in which adjustments could be made was considered to be of one year. Therefore, 89 percent of these costs extended for at least a year ahead. Interest expense was 70 percent fixed, indicating the heavy investment in facilities. Expenditure for salaries and wages, a major cost item in elevator operation, was 63 percent fixed for the year period. Salaries for personnel hired by the year were considered as fixed in that they are necessary for the continued operation of the elevator. However, wages for seasonal help required in elevator operation were considered as a variable expense inasmuch as they vary with volume handled. Operational expenses for utilities, repairs, truck expenses, and other selling expenses were 40 percent fixed.

<sup>1</sup> Adlowe L. Larson, and Howard S. Whitney, *Relative Efficiencies of Single-Unit and Multiple-Unit Cooperative Elevator Organizations*, Oklahoma Agricultural Experiment Station Bulletin No. B-426, pp. 10-12, 1954.

<sup>2</sup> Adlowe L. Larson, "The Fixity Gradient: A Tool for Fixed and Variable Cost Analysis," *Journal of Farm Economics*, Vol. XXVIII, August 1946, pp. 825-834.

Of all expenses of these elevators, 64 percent were classified as fixed. That amount, therefore, would not vary appreciably from year to year unless some major changes were made in the elevator operation.

The fact that approximately only one-third of elevator expenses may be considered as variable or adjustable to operations over a period of a year indicates a problem that elevator firms have in adjusting their operations to a declining volume, as might come from weather fluctuations or from governmental programs.

## Margin Adjustments

Since costs of operation cannot be cut as much as volume, a look at the size of margins which may be obtained is in order. Because of the great demand for storage space in recent years, earnings from wheat storage have been at a fairly high level. As a result, there has been a tendency for earnings from storage to carry the costs the wheat merchandising business incurs. Margins for buying and selling wheat have not been large enough generally to cover the expenses of merchandising.

Elevators commonly have not separated their expenses for merchandising and for storage. They have usually calculated them in terms of cents per bushel handled. As income from storage may become of much less relative importance, a separation of the expenses of the two types of operations will be increasingly desirable. Furthermore, cooperatives, which commonly pay patronage refunds on the basis of bushels of wheat handled rather than have separate refunds for merchandising and for storage, may find it desirable to make separate refunds for the two purposes. The refund may need to be based upon the number of months of storage used, so that different member patrons of the cooperative are treated alike. Therefore, there may need to be an adjustment between the relative shares of the cost of the business carried by merchandising and by storage operations.

Inasmuch as expenses of operation cannot be cut as much as volume may decrease, the question may be asked: "Can margins be increased so as to cover the expenses of merchandising operation?" It does not seem likely that elevators will be able to get much higher margins for their services, since the principal service which they have to sell, storage, will be in relatively large supply compared with the market demands for it. The increase in Oklahoma commercial storage space from 41.9 million bushels in 1942 to 138.4 million bushels in 1955 illustrates this. Since elevators are already built, and since two thirds of their costs of operation are fixed, competition may become severe. Possible storage rates may range between the present rates and those at a lower level which would do little more than take care of the variable costs.

## Appendix A — Wheat Production and Allotments by Selected Areas in Oklahoma, 1956

Type of Farming Area	County	Number of Farms With Allotments	Total Acreage Allotted	Total Wheat Production (Thousands of Bushels)	Value of Wheat (Thousands of Dollars)	Average Acreage per Allotment	Average Production per Allotment (Bushels)	Average Value per Allotment (Dollars)	Total Estimated Acres Seeded
A	Beaver	2025	266,800	713	1426	132	352	704	245,000
	Cimarron	1184	186,448	48	96	157	41	82	177,000
	Texas	2551	388,464	984	1968	152	386	772	380,000
	Total Area "A"	5760	841,712	1745	3490	----	----	----	802,000
B	Harper	1057	131,609	542	1084	125	513	1026	137,000
	Ellis	1268	120,642	663	1326	95	523	1046	114,000
	Woods	1732	178,372	1970	3940	103	1137	2274	184,500
	Woodward	1263	105,600	622	1244	84	492	984	97,500
	Total Area "B"	5320	536,223	3797	7594	----	----	----	533,000
C	Alfalfa	2262	219,296	3765	7530	97	1664	3328	242,000
	Canadian	2241	137,917	3012	6024	62	1344	2688	140,000
	Garfield	3413	272,932	5087	10174	80	1490	2980	285,000
	Grant	2901	270,871	4420	8840	93	1524	3048	283,000
	Kay	2733	185,355	4098	8196	68	1499	2998	188,000
	Kingfisher	2519	207,891	3497	6994	83	1388	2776	211,000
	Major	1893	139,196	1972	3944	74	1042	2084	143,000
	Noble	1830	107,805	2164	4328	59	1183	2366	109,000
	Total Area "C"	19792	1,541,263	28015	56030	----	----	----	1,601,000
D	Craig	1292	14,221	653	1306	11	505	1010	25,500
	Mayes	674	6,827	327	654	10	485	970	14,000
	Nowata	664	8,985	313	626	14	471	942	13,300
	Ottawa	1156	20,268	679	1358	18	587	1174	28,000
	Rogers	698	8,895	300	600	13	430	860	13,000
	Tulsa	403	5,654	195	390	14	484	968	8,700
	Washington	324	5,072	177	354	16	546	1092	6,900
	Total Area "D"	5211	69,922	2644	5288	----	----	----	109,400
Total Areas A, B, C, and D		36,083	2,989,120	36201	72402	----	----	----	3,045,400
Remainder of State		37,137	1,865,891	30967	61934	----	----	----	1,926,600
State Total		73,220	4,855,011	67,168	134,336	66	917	1834	4,972,000

Source: *Congressional Record* Volume 103, No. 157, August 28, 1957, pp. A7152-A7153.

**Appendix B—Wheat: Acreage Planted, Acreage Harvested, Production and Yield; Selected Oklahoma Wheat Producing Areas, 1930-1955.**

Year Beginning July 1	Area A				
	Planted Acres	Harvested Acres	Production Bu.	Yield P.A.	H.A.
1930	1,216,000	861,000	6,298,000	5.2	7.3
1931	1,216,000	1,124,100	20,488,100	16.8	18.2
1932	1,132,000	810,500	7,274,400	6.4	9.0
1933	1,180,000	55,000	251,400	.2	4.6
1934	1,066,700	568,700	3,525,000	3.3	6.2
1935	1,126,000	174,000	599,400	.5	3.4
1936	698,000	163,400	780,700	1.1	4.8
1937	982,000	237,000	1,534,900	1.6	6.5
1938	628,100	419,800	4,813,000	7.7	11.5
1939	711,000	469,000	3,275,500	4.6	7.0
1940	665,000	482,000	6,334,000	9.5	13.1
1941	808,000	582,000	6,170,000	7.6	10.6
1942	772,000	725,000	12,509,000	16.2	17.3
1943	755,000	683,000	6,259,000	8.3	9.2
1944	935,000	787,000	13,768,000	14.7	17.5
1945	997,000	830,000	6,773,000	6.8	8.2
1946	1,113,000	1,020,000	13,079,000	11.8	12.8
1947	1,256,000	1,163,000	18,494,000	14.7	15.9
1948	1,287,000	1,143,000	15,544,000	12.1	13.6
1949	1,344,000	1,224,000	16,619,000	12.4	13.6
1950	1,059,000	487,000	2,533,000	2.4	5.2
1951	1,159,000	554,000	3,447,000	3.0	6.2
1952	1,084,000	945,000	9,875,000	9.1	10.4
1953	1,125,000	529,000	2,240,000	2.0	4.2
1954	909,000	616,000	4,514,000	5.0	7.3
1955	850,000	319,000	1,888,000	2.2	5.9
			Average---	7.1	9.6
<b>Area B</b>					
1930	724,000	688,900	6,979,500	9.6	10.1
1931	704,000	678,300	9,666,900	13.7	14.3
1932	674,000	633,600	6,201,300	9.2	9.8
1933	651,000	517,000	3,220,400	4.9	6.2
1934	600,000	419,100	2,625,000	4.4	6.3
1935	669,000	488,200	2,031,100	3.0	4.2
1936	715,000	550,000	3,391,700	4.7	6.2
1937	799,000	688,000	6,387,800	8.0	9.3
1938	820,400	738,500	7,651,000	9.3	10.4
1939	603,000	499,000	5,773,100	9.6	11.6
1940	491,500	376,000	4,214,000	8.6	11.2
1941	593,000	538,000	6,431,000	10.8	12.0
1942	526,000	505,000	8,154,000	15.5	16.1
1943	529,000	486,000	4,773,000	9.0	9.8
1944	695,000	657,000	10,438,000	15.0	15.9
1945	755,000	728,000	9,643,000	12.8	13.2
1946	793,000	743,000	10,283,000	13.0	13.8
1947	841,000	797,000	11,531,000	13.7	14.5

## Appendix B—continued

## Area B (Continued)

Year Beginning July 1	Planted Acres	Harvested Acres	Production Bu.	Yield	
				P.A.	H.A.
1948	841,000	766,000	8,946,000	10.6	11.7
1949	864,000	777,000	10,309,000	11.9	13.3
1950	705,000	513,000	3,502,000	5.0	6.8
1951	698,000	514,000	4,407,000	6.3	8.6
1952	716,000	689,000	13,373,000	18.7	19.4
1953	748,000	668,000	5,098,000	6.8	7.6
1954	589,500	532,000	5,085,000	8.6	9.6
1955	533,000	155,000	823,000	1.5	5.3
			Average—	9.4	10.7

## Area C

1930	1,596,200	1,515,900	15,523,400	9.7	10.2
1931	1,509,200	1,470,600	25,102,400	16.6	17.1
1932	1,380,900	1,347,100	18,877,900	13.7	14.0
1933	1,435,400	1,420,000	17,083,000	11.9	12.0
1934	1,427,300	1,395,600	20,014,300	14.0	14.3
1935	1,570,500	1,505,000	18,103,900	11.5	12.0
1936	1,679,000	1,536,000	13,232,500	7.9	8.6
1937	1,964,000	1,879,000	27,973,700	14.2	14.9
1938	2,123,000	1,995,600	21,702,000	10.2	10.9
1939	1,859,000	1,791,000	32,755,300	17.6	18.3
1940	1,860,000	1,705,000	26,505,000	14.2	15.5
1941	1,847,000	1,782,000	19,918,000	10.8	11.2
1942	1,389,000	1,351,000	22,772,000	16.4	16.9
1943	1,366,000	1,221,900	10,992,000	8.0	9.0
1944	1,894,500	1,798,000	31,840,000	16.8	17.7
1945	2,054,000	1,977,000	27,368,000	13.3	13.8
1946	2,070,000	1,936,000	32,130,000	15.5	16.6
1947	2,196,000	2,056,000	34,306,000	15.6	16.7
1948	2,233,000	2,087,000	33,855,000	15.2	16.2
1949	2,301,000	2,122,000	29,967,000	13.0	14.1
1950	1,899,000	1,711,000	16,734,000	8.8	9.8
1951	2,028,000	1,706,000	19,599,000	9.7	11.5
1952	2,137,000	2,056,000	44,593,000	20.9	21.7
1953	2,250,000	2,128,000	29,904,000	13.3	14.1
1954	1,685,200	1,598,000	31,527,000	18.7	19.7
1955	1,578,000	1,168,000	8,014,000	5.1	6.9
			Average—	13.2	14.0

## Area D

1930	58,600	42,200	442,200	7.5	10.5
1931	41,200	40,400	596,100	14.5	14.8
1932	62,900	57,000	563,300	9.0	9.9
1933	46,700	45,200	341,800	7.3	7.6
1934	54,500	52,400	609,000	11.2	11.6
1935	81,500	76,000	789,200	9.7	10.4
1936	108,000	97,500	1,123,200	10.4	11.5
1937	154,300	143,300	1,878,400	12.2	13.1

## Appendix B—continued

## Area D (Continued)

Year Beginning July 1	Planted Acres	Harvested Acres	Production Bu.	Yield	
				P.A.	H.A.
1938	209,400	192,900	2,371,000	11.3	12.3
1939	133,000	109,400	1,243,000	9.3	11.4
1940	89,700	78,400	1,022,000	11.4	13.0
1941	87,700	84,500	778,000	8.9	9.2
1942	78,500	61,800	416,400	5.3	6.7
1943	65,000	54,300	417,500	6.4	7.7
1944	91,900	86,500	1,229,000	13.4	14.2
1945	113,400	106,200	1,001,400	8.8	9.4
1946	97,100	86,000	860,000	8.9	10.0
1947	78,900	75,000	1,013,000	12.8	13.5
1948	90,000	77,600	1,191,000	13.2	15.3
1949	82,900	73,400	930,000	11.2	12.7
1950	70,000	64,800	785,000	11.2	12.1
1951	73,000	62,000	739,000	10.1	11.9
1952	77,800	68,600	1,424,000	18.3	20.8
1953	107,500	103,900	2,360,000	22.0	22.7
1954	80,100	75,800	1,785,000	22.3	23.5
1955	97,300	92,000	1,690,000	17.4	18.4
			Average—	11.7	12.9

## Appendix C—Status of National Wheat Acreage Allotments and Marketing Quotas, 1938-1959

Year of Crop	Acreage Allotments in Effect	Marketing Quotas in Effect
1938	Yes	No
1939	Yes	No
1940	Yes	No
1941	Yes	Yes
1942	Yes	Yes
1943	No*	No
1944	No	No
1945	No	No
1946	No	No
1947	No	No
1948	No	No
1949	No	No
1950	Yes	No
1951	No*	No
1952	No	No
1953	No	No
1954	Yes	Yes
1955	Yes	Yes
1956	Yes	Yes
1957	Yes	Yes
1958	Yes	Yes
1959	Yes	Yes

\* Acreage allotments were proclaimed for the 1943 and 1951 crops but, under the emergency powers of the governing law, were terminated after winter wheat was planted.