The hard winter wheat production is extending northward. More hardy varieties make this possible. Generally, farmers prefer to grow winter wheat if it is well adapted as it is likely to produce higher yields because of its longer growing season. Seeding wheat in the fall reduces the fieldwork in the spring. Then too, fall seeding provides some cover for the soil through the winter and helps to prevent the soil from blowing.

Hard winter wheat is also expanding into the soft winter wheat region. The Pawnee variety, developed in the early 1940's, is very well adapted to conditions in the western Corn Belt. In some years more than half of the wheat acreage in southern Iowa, northern Missouri, and west-central Illinois, is in Pawnee wheat. In this humid area Pawnee produces an intermediate-type wheat— it is lower in protein and has a weaker gluten than when grown in a drier area. This wheat can be used in blending flour for bread.

In the hard red winter wheat region there is considerable variation in size and organization of farms and production, and in efficiency levels. Analysis of the characteristics of commercial wheat farms by economic class in the three subregions will help to explain some of the more important differences. (In this discussion the term "wheat farms" in this region is used as synonymous with "cash-grain farms."

SIZE OF BUSINESS

The size of business is important in wheat farming, as it is in all phases of agriculture and in business outside the field of agriculture. A first requirement of high returns in mechanized agriculture is a volume of business large enough for effective use of machinery and labor resources.

The size of business can be measured in several ways. In the 1954 Census, farms were sorted by size on the basis of gross sales, and divided into six economic classes. (See Introduction for description of economic classes.) The size of farm business can also be measured in other ways. For example, by the area of land operated, or the capital invested, or the man-equivalent per farm. These measures of size are given for the three subregions in tables 9, 10, and 11.

Classification of farms by the amount of gross sales was necessarily based on 1-year's data, 1954. In areas of specialized crop production gross sales in any one year are determined largely by the yields and prices of the major crop produced. Obviously, higher or lower wheat yields would have changed the classification of some individual farms. For example, an area may have a high percentage of farms in the low-income groups because yields were abnormally low in 1954, or if yields were much above average, the number of farms in the high-income brackets may be abnormally high. A comparison of yields in 1954 with average yields will give some indication of the effect of the 1954 growing conditions on the 1954 classification of the farms.

	Subregion		
	93	*94*	*103*
1954 wheat yields (bushels per acre)	20.5	19.7	12.2
5-year average (1949–53) yields	17.0	13.8	12.1

Wheat farming in this area is characterized by large acreages per farm, a high capital investment, and a family type of farm. The average cash-grain farmer has a total investment of $45,000 to $70,000 in comparison with a national average of $26,000. Only a little more than the equivalent of one man is employed on the typical wheat farm here.

Substantial variation in size of farms is found in the winter wheat region. Subregions 93 and 94 lie in the eastern part, in southern Nebraska, and in central Kansas, where production per acre is relatively high. Here the land can be farmed more intensively, compared with the western part, because of the high annual rainfall. Consequently, the farms are smaller in acreage farmed. The larger farms in subregion 103 (western Texas, Oklahoma, Kansas, and eastern Colorado) require a larger investment in land and in machinery than the smaller farms in subregions 93 and 94. The livestock investment is rather uniform in all three subregions. Likewise, the labor required per farm is approximately the same.

Table 9.—SIZE OF CASH-GRAIN FARMS IN SUBREGION 93, BY ECONOMIC CLASS OF FARM: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	19,859	283	3,868	7,768	5,603	1,910	427
Total acres per farm	358	1,073	554	362	257	184	132
Crop acres per farm	258	801	403	264	180	125	75
Capital investment per farm:							
Land and buildings dollars	33,745	97,567	54,577	34,659	22,356	13,827	10,265
Livestock do	2,817	7,509	4,385	2,948	2,003	1,257	778
Machinery do	8,023	15,820	10,665	8,218	6,874	5,143	3,313
Total do	44,585	120,896	69,627	45,825	31,233	20,227	14,356
Man-equivalent per farm	1.2	2.1	1.4	1.2	1.1	0.9	0.8

Table 10.—SIZE OF CASH-GRAIN FARMS IN SUBREGION 94, BY ECONOMIC CLASS OF FARM: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	23,140	413	5,179	8,630	6,294	2,233	391
Total acres per farm	362	1,163	580	353	226	166	122
Crop acres per farm	264	861	435	260	157	106	67
Capital investment per farm:							
Land and buildings dollars	44,520	147,439	75,019	43,546	25,563	17,290	11,897
Livestock do	2,283	6,486	3,544	2,290	1,503	1,042	617
Machinery do	7,949	15,948	10,627	7,956	6,496	5,086	3,606
Total do	54,752	169,873	89,190	53,792	33,562	23,418	16,120
Man-equivalent per farm	1.1	2.1	1.4	1.1	1.0	0.8	0.8

Table 11.—SIZE OF CASH-GRAIN FARMS IN SUBREGION 103, BY ECONOMIC CLASS OF FARM: 1954

Item	Economic class of farm						
	Total	I	II	III	IV	V	VI
Number of farms	32,545	1,928	8,644	10,692	7,086	3,353	842
Total acres per farm	820	2,163	1,076	713	519	445	500
Crop acres per farm	607	1,534	810	526	384	331	395
Capital investment per farm:							
Land and buildings dollars	55,367	158,204	77,024	47,592	31,245	24,516	22,145
Livestock do	3,040	7,933	4,275	2,794	1,805	1,033	665
Machinery do	10,832	18,943	13,102	10,389	8,669	7,282	6,900
Total do	69,239	185,080	94,401	60,775	41,719	32,831	29,710
Man-equivalent per farm	1.3	2.5	1.5	1.2	1.0	1.0	1.0