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CHAPTER 6

Physical Capital per Farm and per Person Engaged in Farming

THE farm is the unit of operation in agriculture. Value of capital per farm therefore measures the resources that are utilized in the average establishment engaged in the production of farm products. As a rule it is also a measure of the average resources under the management of the individual farm operator.[1] When reported in current dollars, the value of capital per farm suggests the magnitude of the financial problem that from time to time has faced those who wished to become owner-operators. When expressed in constant dollars, the value of capital per farm indicates trends in the amount of resources per operational unit, i.e. in the scale of farming. Variations in the scale of farming, either regional or secular, have probably contributed a great deal to differences in the efficiency with which agricultural resources were utilized and to differences in farm income.

Regional Differences in Scale of Farming

Regional differences in the value of physical assets per farm are striking. This value in current dollars was consistently lowest in the Delta States and the Southeast, and highest, at one time or another, in the Pacific, the Great Plains, or the Mountain regions.[2] In 1910

[1] The foregoing generalizations do not quite fit those parts of the South in which the share-cropper is common. The census recognizes the "cropper" as a farm operator, and his holding, rather than the larger one of which it is a part, is considered a farm, provided that it qualifies in respect to acreage or income produced. The management of farms operated by share-croppers is ordinarily largely in the hands of the owner, who provides not only the land but also the power and machinery with which some of the major operations are performed. The share-cropper supplies mainly his labor, although in some cases he may supply a part of the implements too.

In the regions in which this system is common the value of capital per census farm may give a somewhat distorted view of the scale on which farm operations are conducted. At least some of the operations, such as plowing, are often performed on a larger scale than these data suggest. However, the impression received from a comparison of regional figures—that farming is on a decidedly smaller scale in the cotton- and tobacco-growing states—is correct. That the scale declined from 1870 to 1930 to the extent indicated is largely, but not wholly, a consequence of the development of the cropper arrangement.

[2] The current dollar values are to be preferred for interregional comparisons of aggregate values at any point in time. Constant-price values were calculated in order to measure changes in physical volume through time, and for this purpose it matters little which particular weight base is used (see Table 3, and discussion on page 44). But if interest is focussed on interregional comparisons at a given point in time, the weight base used in calculating the con-

the Pacific and Great Plains regions had the highest investment per farm—more than seven times as large as in the Southeast and Delta States, and nearly five times as large as in the Appalachian region. In 1950 the highest investment per farm—$42,800—was in the Mountain region; this was roughly five times the figure for the Delta and Southeast regions.

In the Delta States and the Southeast the relatively low value of resources per farm and the marked tendency until recently for the constant-price values to decline (Table 14) result basically from an increasingly dense rural population with relatively limited opportunities for more remunerative nonfarm employment. The sharp decline in the earlier decades reflects also the development of the share-cropper system, which multiplied the number of farms without altering greatly the resources involved in farming, or even, in many instances, the resources that were essentially under a single management. It reflects likewise the breakup of some of the larger plantations into owner-operated farms of smaller size. Similar forces were at work in some states of the Appalachian region.

In contrast, in the Great Plains and Mountain regions, where the investment per farm grew rapidly and in 1950 exceeded that of every other region, the population was sparse. Enlargement of farm acreage was therefore relatively easy, and in the agriculture which developed—small grain and livestock production—the economies of large-scale operation were marked.

Changes in Scale of Farming

How has the scale of farming, as reflected in the constant-price value of physical capital per farm, changed through the years? For the United States as a whole it was slightly smaller in 1900 than in 1870 (Table 14). After 1900 it expanded slowly to 1940, and very rapidly during the 1940's.

Pronounced upward trends in the constant-price value of capital per farm throughout the eighty-year span are clearly present in the Lake States, the Corn Belt, and the Great Plains region. In contrast, the trend was downward at least to 1935 or 1940 in the Appalachian, Delta, Southeast, and Pacific regions. In Texas-Oklahoma and, after 1890, in the Mountain region the trend was toward lower values of capital per farm until 1910 and thereafter toward higher values. In the Northeast no long-term trends are discernible.

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stant-price aggregates may make a substantial difference in the results. In such instances there is less ambiguity if values in current dollars are compared.

TABLE 14

Value of Physical Farm Assets per Farm in Current and 1910-1914 Prices, by Regions, Census Years, 1870-1950
(*thousands of dollars*)

Region	*1870*	*1880*	*1890*	*1900*	*1910*	*1920*	*1930*	*1940*	*1950*
					Current Prices				
United States	4.5	3.3	3.8	3.8	6.8	13.0	9.6	7.2	20.0
Northeast	6.4	4.9	4.9	4.6	6.1	9.6	10.5	7.9	18.6
Appalachian	3.1	2.1	2.3	2.0	3.2	6.2	4.8	4.0	10.0
Southeast	1.8	1.1	1.3	1.1	2.1	4.8	3.2	3.1	8.7
Lake States	4.0	3.6	4.1	4.7	7.9	15.7	12.4	8.8	21.4
Corn Belt	5.2	4.4	5.2	5.9	11.4	22.6	14.3	10.7	27.1
Delta States	2.1	1.5	1.5	1.3	2.0	4.3	2.8	2.6	8.1
Great Plains	3.3	2.5	4.4	5.8	14.5	29.0	19.5	11.0	34.5
Texas-Oklahoma	2.1	1.8	2.7	2.8	5.4	10.6	8.3	7.1	23.8
Mountain	3.2	5.6	7.7	6.0	10.0	17.9	14.4	10.9	41.5
Pacific	7.5	7.3	11.0	8.1	14.9	23.3	21.0	13.8	38.2
					Constant Prices (1910-1914 Average)				
United States	7.4	6.9	7.4	7.0	7.1	7.7	7.8	8.0	10.0
Northeast	6.4	6.2	6.3	6.1	6.3	6.6	7.1	6.5	8.0
Appalachian	4.9	3.9	3.9	3.3	3.3	3.4	3.2	3.2	3.9
Southeast	4.5	2.9	2.7	2.2	2.2	2.4	2.2	2.6	3.5
Lake States	6.1	6.5	6.9	7.2	8.3	9.0	9.5	9.2	11.2
Corn Belt	10.6	10.7	11.5	11.2	12.0	13.0	13.1	12.9	15.0
Delta States	3.6	3.0	2.8	2.2	2.1	2.2	2.0	2.1	2.9
Great Plains	7.3	7.8	10.6	13.2	14.9	17.5	18.3	18.1	23.0
Texas-Oklahoma	8.0	6.0	6.7	6.6	5.8	6.3	6.3	7.1	9.7
Mountain	6.0	12.6	14.9	12.9	10.1	11.8	13.5	14.2	21.4
Pacific	26.7	26.5	22.3	19.0	16.6	16.3	15.3	15.2	18.7

Source: Based on Tables 6, 7, and 9.

Changes in the value of capital per farm were often accompanied by somewhat similar changes in the average number of acres per farm (Table 15), since in most regions land was the most important capital item. In the South and in the Pacific region the long decline in the value of physical assets per farm went hand in hand with a decline in average acreage. In the South this trend to smaller farms was a consequence of the growing density of farm population and of the share-cropper arrangement. In the Pacific region it resulted from the development of types of farming, including the production of fruit, vegetables, dairy, and poultry products, which were suitable to smaller farms and which became more important relative to the ranches that produced range livestock and wheat. In other regions, notably the Great Plains, in which topography, type of farming, and relatively sparse settlement invited expansion that would make possible more efficient operation, the average acreage increased about as fast as the value of total physical assets. In some regions, however, the constant-price value of all farm capital outran the increase in acreage to an extent that altered the capital per acre considerably. For example, in the Corn Belt the average farm in 1940 contained about the same number of acres as in 1870, yet the investment at constant prices was a fifth greater. For some classes of capital the difference was much greater: the value of machinery per farm in 1940, at constant prices, was more than four times that of 1870, and the value of stored crops was more than two and a half times as great.

Relation of Physical Farm Assets to Persons Engaged in Farming

The amount of physical farm assets per person engaged in farming increased steadily throughout the eighty-year span encompassed by this study. By 1950 the value of these assets per farm worker, in 1910-14 average prices, was 170 per cent higher than in 1870 (Table 16).

From 1870 to 1940 the increase in physical farm assets per worker ranged from 5 to 13 per cent per decade. Then the rate accelerated sharply. In 1950 the amount of physical farm assets per worker was 47 per cent greater than in 1940 (Table 17).

During the early decades, when the settlement of many regions was still in progress, the number of persons working on farms increased rapidly, but the physical resources used in farming increased at an even faster rate (Table 17). Land was abundant in these regions and was available to settlers for conversion into farms at low cost. Between 1910 and 1920 the number of persons engaged in

TABLE 15

Average Number of Acres per Farm, by Regions, Census Years, 1870-1950

Region	*1870*	*1880*	*1890*	*1900*	*1910*	*1920*	*1925*	*1930*	*1935*	*1940*	*1945*	*1950*
United States	153	134	136	146	138	148	145	157	155	174	195	215
Northeast	104	98	95	96	96	99	92	102	93	97	98	111
Appalachian	189	140	127	102	91	84	77	80	76	80	80	85
Southeast	266	157	130	102	85	78	77	75	83	96	102	124
Lake States	114	112	115	121	125	127	122	130	125	129	139	146
Corn Belt	125	118	120	116	119	123	122	129	122	129	136	142
Delta States	190	148	124	89	76	71	66	60	65	72	80	91
Great Plains	154	160	198	270	297	359	339	365	359	408	461	492
Texas-Oklahoma	301	208	224	323	232	232	212	227	242	289	323	383
Mountain	127	159	299	458	324	481	564	652	641	822	1,151	1,284
Pacific	420	379	337	335	270	240	204	231	209	231	254	279

Source: Based on Table 6.

TABLE 16

Value of Physical Farm Assets per Person Engaged in Farming, in Current and 1910-1914 Prices, by Regions, Census Years, 1870-1950

(*thousands of dollars*)

Region	*1870*	*1880*	*1890*	*1900*	*1910*	*1920*	*1930*	*1940*	*1950*
					Current Prices				
United States	1.7	1.6	1.8	2.0	3.7	7.3	5.8	4.8	15.6
Northeast	3.5	2.9	2.7	2.8	4.0	6.3	6.4	5.9	15.0
Appalachian	1.0	1.0	1.0	1.0	1.7	3.6	3.0	2.8	8.7
Southeast	0.3	0.3	0.4	0.4	0.9	2.1	1.6	1.6	6.3
Lake States	2.1	2.1	2.3	2.8	5.1	10.1	7.9	6.0	16.1
Corn Belt	2.6	2.3	2.7	3.4	7.5	14.9	9.6	8.1	22.9
Delta States	0.5	0.4	0.5	0.5	0.9	2.1	1.6	1.6	6.5
Great Plains	1.6	1.5	2.6	3.5	9.7	19.1	12.8	7.8	25.0
Texas-Oklahoma	0.7	0.8	1.2	1.6	2.7	5.5	5.1	4.5	18.7
Mountain	0.9	2.1	2.7	3.0	5.6	10.3	8.1	6.9	25.5
Pacific	3.8	3.2	4.5	4.2	7.8	12.2	10.6	8.0	23.0
					Constant Prices (1910-1914 Average)				
United States	2.9	3.2	3.4	3.7	3.9	4.4	4.7	5.3	7.8
Northeast	3.5	3.7	3.4	3.6	4.1	4.3	4.3	4.8	6.5
Appalachian	1.6	1.8	1.7	1.7	1.8	2.0	2.0	2.3	3.4
Southeast	0.8	0.9	0.9	0.9	0.9	1.0	1.1	1.4	2.5
Lake States	3.2	3.9	3.8	4.3	5.3	5.8	6.1	6.3	8.4
Corn Belt	5.3	5.7	6.0	6.5	7.8	8.6	8.8	9.7	12.7
Delta States	0.8	0.9	0.9	1.0	0.9	1.1	1.1	1.3	2.3
Great Plains	3.4	4.7	6.1	7.9	10.0	11.7	12.0	12.8	16.7
Texas-Oklahoma	2.7	2.6	3.0	3.8	2.9	3.3	3.8	4.5	7.6
Mountain	1.7	4.7	5.1	6.4	5.6	6.8	7.6	9.0	13.2
Pacific	13.7	11.6	9.1	9.8	8.7	8.6	7.7	8.8	11.3

Source: Based on Tables 5, 7, and 9.

TABLE 17

Percentage Change in Persons Engaged in Farming, Value of Physical Farm Assets, and Value of Physical Assets per Person, United States, Intercensal Periods, 1870-1950

Period	*Persons*	*Assets*[a]	*Assets per Person*[a]
1870-80	25.3	40.8	10.3
1880-90	15.8	21.2	6.2
1890-1900	9.8	19.6	8.8
1900-10	6.2	12.6	5.4
1910-20	−1.2	9.9	12.8
1920-30	−8.5	−1.4	6.8
1930-40	−12.5	−1.2	12.8
1940-50	−24.6	10.5	47.2

[a] Based on constant-price values.
Source: Based on Tables 4, 9, and 16.

farming began to decline, probably as a result of World War I, but as farming had seldom been so profitable and so promising as during this period, the volume of farm assets rose to the end of the decade. During the 1920's, which in general were difficult years for farmers, the number of persons engaged in agriculture declined 8½ per cent, although the physical assets with which they worked fell only 1 per cent. Between 1930 and 1940 the farm labor force shrank faster than during the previous decade, but assets shrank only slightly.

By far the greatest increase of physical capital per farm worker occurred in implements and machinery (Table 18). In the eighty years following 1870 the value per worker of this class of assets rose from $36 to $638 in 1910-14 prices, or 1,672 per cent. After 1920 this gain reflected increasingly the substitution of mechanical power for work animals and a general increase in the size of machinery. If horses and mules are included with implements and machinery, to make a total for mechanical devices and power to propel them, the increase per person from 1870 to 1950 was from $189 to $765, or 305 per cent. No other class of farm capital rose so much in relation to farm labor. The smallest increase occurred in livestock—64 per cent. This reflects, of course, a sharp decline in horses and mules. Exclusive of work animals, livestock increased 123 per cent, still the smallest gain among the major classes.

The extraordinary substitution between 1940 and 1950 of mechanical aids for human labor is brought out in Table 18. Implements, machinery, and vehicles per worker, valued in 1910-14 prices,

more than tripled in that decade, a greater relative increase than had ocurred in all four previous decades put together. If we include the capital embodied in horses and mules, there was a doubling in equipment and power per worker between 1940 and 1950, an increase in a single decade that exceeded the total increase piled up during the whole period of advance from 1880 to 1940.

Wide regional differences in the amount of physical farm assets per worker were to be found in 1870. Farm property per farm worker, in current prices, amounted to $325 in the Southeast and $484 in the Delta States. In the Pacific States and the Northeast—regions far removed from each other and with very different types of farming—the highest investment per person obtained. Agricultural workers in the Pacific region, on the average, worked with twelve times the capital available to those in the Southeast (Table 16). Over the years this range was considerably reduced, and in 1950 the regions that ranked highest in the amount of capital per farm worker had only about four times as much as those at the bottom of the scale.

The extremely low value of capital per worker in the Southeast and in the Delta States in 1870 was partly due to the type of farming and to farm practices that had developed before the Civil War. The production of cotton under a slave economy had made very large use of hand labor. Even before the Civil War destroyed much agricultural capital, the amount of real estate, machinery, and livestock per worker in the South was relatively low, and the losses of the war accentuated this situation.[3] As farm income in the South during the reconstruction period was especially meager, provision of more capital per worker through savings from income was a slow and painful process. Hardly less so was the improvement of land or the increase of other physical assets directly through the farmers' own efforts. Moreover, facilities for granting credit were often inadequate. Thus with painfully slow accretions to capital on the one hand, and a rapid growth of rural population seeking employment on farms on the other, the amount of physical assets per farm worker remained well below that of other regions. Indeed, relatively low farm income continued to characterize the South to 1950. These influences operated to some extent also in the Appalachian and Texas-Oklahoma regions, which lie partly in the Cotton Belt. Consequently physical assets per farm worker in these border regions have also been consistently low.

The Pacific region is unique in that physical capital per worker,

[3] For example, it was widely held that one Negro was required for every 3 acres of cotton (see Emory I. Hawk, *Economic History of the South*, Prentice-Hall, 1934, p. 236).

the highest in the United States in 1870, declined with great consistency until 1930. The sparse settlement and the predominant types of agriculture—production of small grains and range livestock—made the investment in farm property per worker in the early decades larger than in any other region. In California in particular, much wheat was produced on large ranches with equipment that dwarfed that of most other regions.

Thicker settlement of the Pacific region was accompanied by a steady decline in the average size of farms (Table 15) and by a shift in the relative importance of different types of agriculture. On the smaller farms fruit, nuts, vegetables, and dairy and poultry products could be produced advantageously with a smaller investment per person engaged in farming. The increasing prominence of these branches accounts for the decline in both investment per farm and investment per person engaged in farming.

Although increases in the amount of physical capital per worker occurred in all regions except the Pacific, the degree of increase varied considerably. The smallest gains, 87 and 112 per cent, occurred respectively in the Northeast and Appalachian regions. The gains in these regions were also less consistent than elsewhere. In contrast, in the Great Plains and Mountain regions the amounts of physical capital per worker in 1950 were respectively about five and eight times as much as in 1870.

Four factors appear chiefly to have influenced the direction and rate of growth of physical capital per worker, and to account for many of the regional differences in that growth. The first is the extent to which a region was settled or developed in 1870. As has already been observed, the smallest gains in capital per worker were in the Northeast and Appalachian regions, which were far removed from the frontier of 1870 and well settled at that time. The largest gains were in the Great Plains and Mountain regions. Doubtless the greater growth in the Western regions stems in part from the presence of abundant land together with sparse population. These characteristics encouraged the development of types of agriculture in which a relatively large capital investment is profitable and discouraged agricultural operations which could not easily be mechanized or which for other reasons required relatively large amounts of labor per unit of capital.

Thus a second factor that influenced the growth of capital per worker was the type of agriculture. In some types, such as the production of range livestock, small grains, hay, and more recently corn, large amounts of capital per worker proved profitable. Other crops,

TABLE 18

Physical Capital per Worker in Current and 1910-1914 Prices, Acres in Farms per Worker, and Percentage Change per Decade, United States, 1870-1950

A. Physical Capital per Worker

Asset Group and Acreage per Worker	*1870*	*1880*	*1890*	*1900*	*1910*	*1920*	*1930*	*1940*	*1950*
					Current Prices				
Total physical assets	1,732	1,557	1,757	1,995	3,735	7,323	5,777	4,791	15,554
Land and buildings	1,352	1,188	1,336	1,523	3,002	5,792	4,572	3,672	10,897
Implements and machinery	49	47	50	69	109	314	315	334	1,874
Livestock	239	210	269	276	423	741	620	558	1,862
Horses and mules	91	82	128	86	229	242	135	139	69
Other	148	128	141	190	193	498	485	419	1,793
Crop inventories	92	112	102	127	201	476	269	228	921
					Constant Prices (1910-1914 Average)				
Total physical assets	2,884	3,240	3,392	3,694	3,914	4,353	4,694	5,301	7,775
Land and buildings	2,369	2,643	2,696	2,977	3,158	3,443	3,786	4,310	6,087
Implements and machinery	36	42	53	76	109	177	213	210	638
Livestock	364	402	458	452	455	513	472	510	597
Horses and mules	153	172	205	214	232	250	204	179	127
Other	211	230	253	237	223	263	267	332	470
Crop inventories	115	154	185	189	192	220	224	270	453
Acres per worker	60	62	63	77	76	83	94	116	168

(continued on next page)

TABLE 18 (continued)

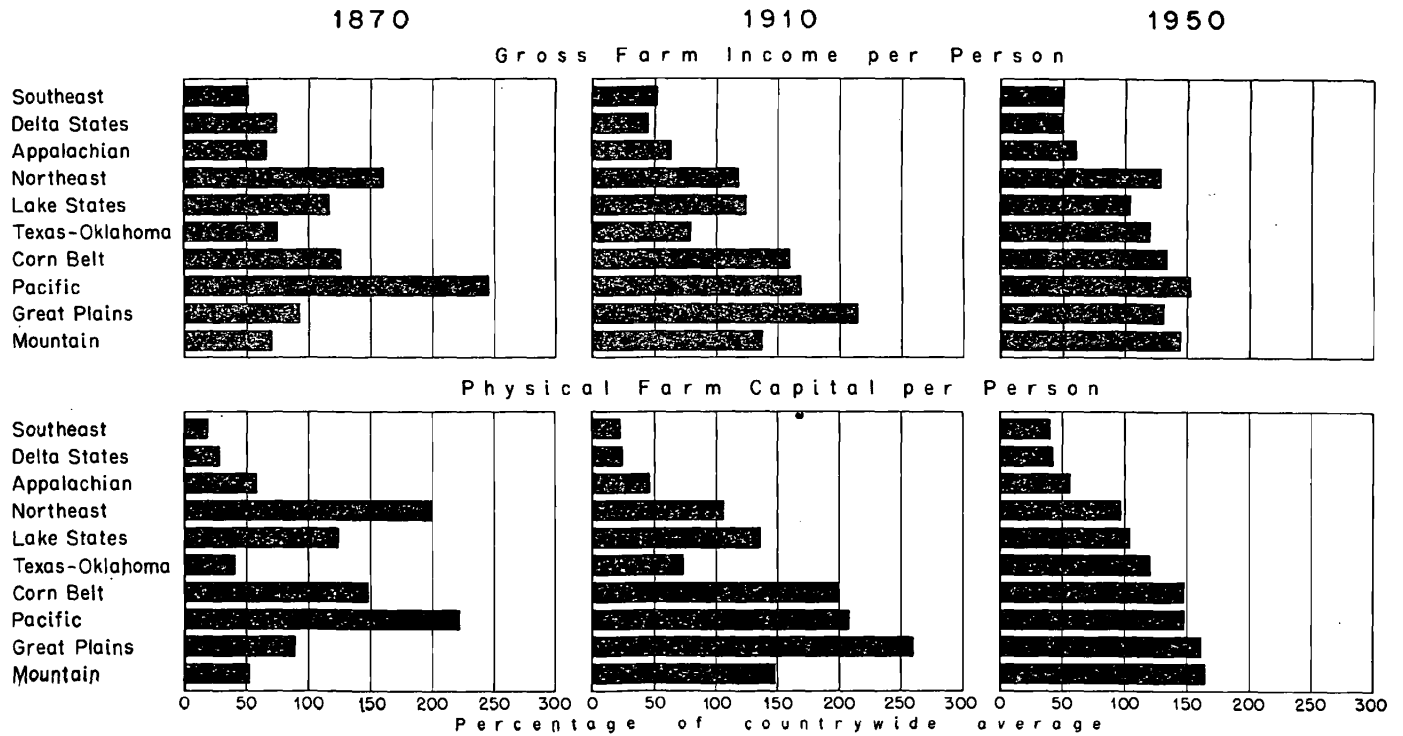
B. Percentage Change per Decade

Asset Group and Acreage per Worker	*1870-1880*	*1880-1890*	*1890-1900*	*1900-1910*	*1910-1920*	*1920-1930*	*1930-1940*	*1940-1950*
				Current Prices				
Total physical assets	−10.1	12.8	13.5	87.2	96.1	−21.1	−17.1	224.7
Land and buildings	−12.1	12.5	14.0	97.1	92.9	−21.1	−19.7	196.8
Implements and machinery	−4.1	6.4	38.0	58.0	188.1	0.3	6.0	461.1
Livestock	−12.1	28.1	2.6	53.3	75.2	−16.3	−10.0	233.7
Horses and mules	−9.9	56.1	−32.8	166.3	5.7	−44.2	3.0	−50.4
Other	−13.5	10.2	34.8	1.6	158.0	−2.6	−13.6	327.9
Crop inventories	21.7	−8.9	24.5	58.3	136.8	−43.5	−15.2	303.9
				Constant Prices (1910-1914 Average)				
Total physical assets	12.3	4.7	8.9	6.0	11.2	7.8	12.9	46.7
Land and buildings	11.6	2.0	10.4	6.1	9.0	10.0	13.8	41.2
Implements and machinery	16.7	26.2	43.4	43.4	62.4	20.3	−1.4	203.8
Livestock	10.4	13.9	−1.3	.7	12.7	−8.0	8.1	17.1
Horses and mules	12.4	19.2	4.4	8.4	7.8	−18.4	−12.3	−29.1
Others	9.0	10.0	−6.3	−5.9	17.9	1.5	24.3	41.6
Crop inventories	33.9	20.1	2.2	1.6	14.6	1.8	20.5	67.8
Acres per worker	3.3	1.6	22.2	−1.3	9.2	13.3	23.4	44.8

Source: Based on Tables 4, 6, 7, and 9.

CHART 10

Gross Farm Income and Physical Farm Capital per Person Engaged in Agriculture as Percentage of Countrywide Average, by Regions, Arranged According to Capital per Worker in 1950



Source: Table 19.

TABLE 19

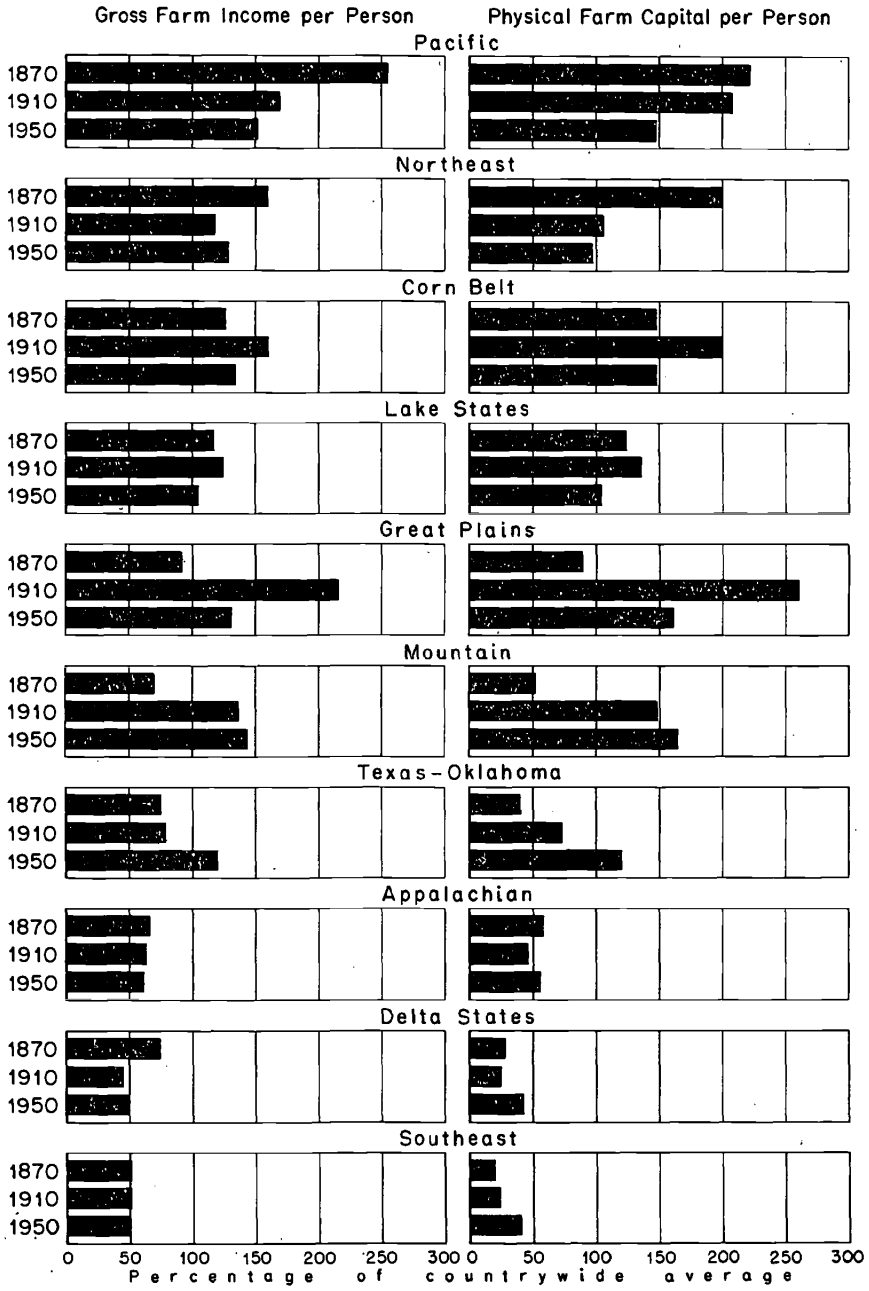
Gross Farm Income and Physical Capital per Person Engaged in Agriculture as Percentage of Countrywide Average, in Current Prices, by Regions, 1870, 1910, and 1950

Year	*Northeast*	*Appa-lachian*	*Southeast*	*Lake States*	*Corn Belt*	*Delta States*	*Great Plains*	*Texas-Oklahoma*	*Moun-tain*	*Pacific*
					Gross Farm Income per Person					
1870	160	66	51	117	126	74	92	75	70	245
1910	118	63	51	124	160	45	215	79	137	169
1950	129	61	50	104	134	50	131	120	144	152
					Physical Capital per Person					
1870	200	58	19	124	148	28	89	40	52	222
1910	106	46	23	136	200	24	260	73	149	208
1950	97	56	40	104	148	42	161	120	164	148

Source: Based on Tables 5, 7, and H-3.

CHART 11

Gross Farm Income and Physical Farm Capital per Person Engaged in Agriculture as Percentage of Countrywide Average, by Regions, Arranged According to Level and Trend in Capital per Worker, 1870, 1910, 1950



such as fruit, nuts, and vegetables, are not so well adapted to machine processes at certain stages of production. Cotton is a staple product that resisted mechanization partly because of technical difficulties, but partly also because an abundant labor supply reduced the incentive that spurred changes elsewhere in agriculture.

A third factor, therefore, that had great influence on the amount of capital per worker was the supply of workers. Agriculture competes with other sectors for its part of the total labor force. When, and where, nonfarm employment has been relatively attractive and plentiful, it has drawn workers from farms in large numbers. It has thus created a special incentive to increase labor-saving equipment so that farm operations may continue on the same scale despite the loss of workers. This undoubtedly was a factor of considerable importance in regions such as the Northeast, the Corn Belt, and the Lake States, where large industrial centers developed. It probably was important in most regions during the 1940's, when, because of the demand for labor in industrial plants and other war-expanded activities, many workers left the farms. Conversely, as already indicated, the relatively meager opportunities for nonfarm employment in many parts of the South help to account for the slow growth of capital per worker in that region.

A fourth factor is the ability of farmers to finance the acquisition of capital items. This is closely related to the size of net farm income, which is the source of farmers' savings and an important factor determining their credit. The basic data do not permit regional comparisons of capital per person engaged in farming and net income, but a comparison of capital per person engaged and gross income is possible and instructive.

The close association of the level of capital and of gross income per person engaged in agriculture is clearly indicated by the data in Table 19, which show the relative levels of the regions in relation to the countrywide averages. Charts 10 and 11 make use of these data to emphasize the more important lessons they contain. Chart 10 makes it clear that (1) differences between regions in capital per worker are closely associated with differences in gross income per worker, (2) the pattern of interregional differences that existed in 1950 developed gradually (i.e. the pattern of 1910 is more like that of 1950 than the pattern of 1870 is like 1950), (3) interregional differences have tended to diminish. Chart 11 reveals the close similarity within regions between the patterns of change in capital and in

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Note to Chart 11:
Source, Table 19. The top two regions have high levels but declining trends in capital per worker, the next two high and fairly stable levels, the next three high and sharply rising trends, and the last three low levels.

income: regions that lost position in respect of capital (relative to the countrywide average) also lost in respect of income; those that gained in capital gained also in income; those that stayed low in capital stayed low in income; those that remained high in capital remained high in income.

Unfortunately, in the less prosperous farming regions low incomes often prevented the acquisition, either by cash or by credit, of capital that might have raised the productivity and the income of farm workers. Even in the best regions, in times of agricultural depression, low income has been a barrier to acquisition of capital. The extremely rapid growth of capital per worker during the 1940's was possible because of the unusual ability of farmers to pay for additional physical capital, largely out of their own savings which had been considerably enhanced by the prosperity of those years (see Chapter 8).

In this connection it is of extraordinary interest that the causal relation of low income to low capital per worker that has just been noted has a natural but unfortunate sequel, namely, that the level of capital per person engaged in farming largely determines the level of income per person engaged. Thus farmers in regions of low average income are caught in a vicious circle of cause and effect. Their income is excessively low largely because of the low level of capital per person engaged, and the inadequate amount of capital is largely a consequence of low income. As a result, farmers in such regions are generally faced by special obstacles and difficulties when they seek to improve their condition by raising their productivity.