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## APPENDIX A

### Methods of Computing Constant-Price Values of Farm Real Estate

THE physical inventory of farm real estate is affected by changes in the area and condition of land in farms and in the number, character, and condition of farm buildings. Physical measures of at least some of these changes are available. Acreage of land in farms and of improved land in farms, as well as the number of farms, has been reported by the Bureau of the Census or estimated by the Bureau of Agricultural Economics.<sup>1</sup> But none of the physical measures is really comprehensive; none is expressed in terms that can be combined with the measures of other elements in real estate growth, or of other classes of farm capital. Hence a series of constant-price values that reflects the movement of the more prominent indicators of physical change was calculated (Chart A-1).<sup>2</sup> Different procedures were used for the eleven states of the Mountain and Pacific regions, where irrigation is widely practiced, and for the remaining thirty-seven states. These are described below.<sup>3</sup>

<sup>1</sup> Improved land was defined in the 1920 census as "all land regularly tilled and mowed, land in pasture which has been cleared or tilled, land lying fallow, land in gardens, orchards, vineyards and nurseries, and land occupied by farm buildings." Unimproved land, according to the census definition, included woodland, brushland, rough or stony land, swamp land, and any other land not improved.

Substantially the same classification was used at each census from 1880 to 1920. In 1870 improved land meant "cleared land used for grazing, grass or tillage, or lying fallow." After 1920 the census did not classify land in farms as "improved" or "unimproved." However, beginning with 1925 BAE has estimated the acreage of "improved" land for census years by combining, and in some cases adjusting, the following classes: cropland harvested, land on which crops failed, fallow or idle cropland, plowable pasture, farmsteads, gardens, orchards, roads, and ditches.

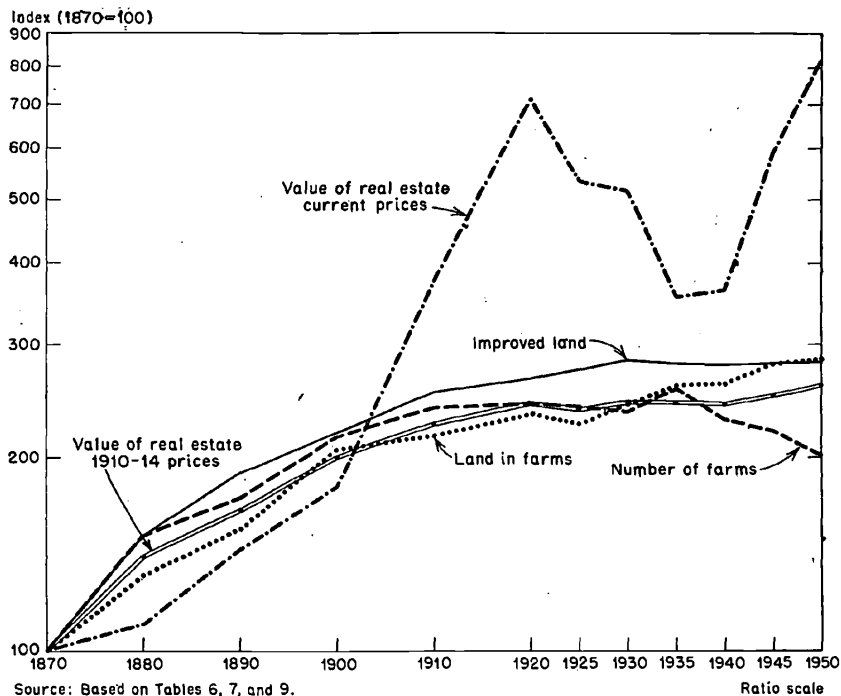
<sup>2</sup> For a table of the state estimates and some tests of their reliability, see Alvin S. Tostlebe, "Estimated Value of Farm Real Estate 1870-1950 in 1910-14 Prices," *Agricultural Finance Review*, BAE, November 1952.

<sup>3</sup> It would have been highly desirable to incorporate in our estimates the influence of changes in the condition of farm land which occurred after it passed from the unimproved to the improved classification. The quality of improved land was often raised by drainage and by practices that resisted erosion or added fertility to the soil. Unfortunately, depletion and deterioration of the soil were also widespread. How much these conflicting developments added to or subtracted from the land is very hard to estimate and we have not attempted to do so. Failure to estimate these influences probably does not greatly damage our estimates of growth in farm land since betterment and deterioration tend to offset each other.

APPENDIX A

CHART A-1

Value of Farm Real Estate in Current and in 1910-1914 Prices, Total Land and Improved Land Acreage in Farms, and Number of Farms: Index Numbers, United States, Census Years, 1870-1950



*Procedure in the Thirty-Seven Humid States*

CONSTANT-PRICE VALUE OF LAND, 1870-1950

As the method applied to these states treats land and buildings separately, the first step was to obtain the average value of land alone for the base years 1910-14. This was done in two operations. First BAE's 1910-14 average value per acre of land and buildings was multiplied by the ratio of the value of land to the value of land and buildings as reported by the 1910 census. The resulting value per acre of land was then multiplied by the acreage in farms reported by the 1910 census. For example, the BAE estimate of the 1910-14 average value per acre of land and buildings in Ohio is \$71.06. Multiplying this amount by the ratio of the value of land in Ohio in 1910 to the value of land and buildings (0.777) gives a per acre value of \$55.21 for land alone. When this amount is multiplied by the census

## APPENDIX A

acreage for 1910, the product is the value of Ohio farm land in 1910 at 1910-14 prices, or \$1,331 million.

The second step was to calculate a per acre value for "improved" and "unimproved" farm land in each state. In addition to the value of all land in farms in 1910 at the 1910-14 level of prices and the acreages of improved and unimproved land, this step required a ratio of the value per acre of improved and unimproved land in the 1910-14 period. Unfortunately, data with which to establish such a ratio are limited. However, those that were found pertain to, or are particularly applicable to, the South and the Lake States, where recognition of the difference in rate of increase in improved and unimproved farm acreage is especially necessary for a trustworthy estimate of constant-price values.<sup>4</sup> These data indicate that during 1910-14, in areas in which unimproved land in farms was mainly woodland or cut-over forest, the per acre value of improved land was about three times that of unimproved land. As the data indicate a surprising similarity in the ratio of the value of improved to unimproved land in widely separated regions and in soils of very different quality, a 3 to 1 ratio was applied in all of the humid states except those of the Great Plains region, Iowa, and Illinois. In these six states unimproved farm land was typically prairie. The cost of converting unbroken prairie into cropland usually was much less than the cost of clearing woodland or stumpland. Hence a lower ratio, 1½ to 1, was considered appropriate for these states.

With these estimates of the relation between the value per acre of improved and unimproved land in 1910-14, together with the number of acres in each class in 1910 and the value of all land in farms in 1910 at the 1910-14 price level, it was possible to calculate the respective values per acre of the two categories for each state.<sup>5</sup> These per acre values became the constant prices that were applied respectively to the number of acres of improved and of unimproved land

<sup>4</sup> See "Supplementary Note," p. 183.

<sup>5</sup> Thus for Ohio, where in 1910 the unimproved and the improved land in farms amounted to 4,877,739 and 19,227,969 acres respectively, and the calculated value of all farm land at the 1910-14 level of prices was \$1,330,876,139, the per acre values at the 1910-14 level for unimproved and improved farm land were calculated as follows:

Let  $X$  = the value per acre of unimproved land in 1910-14 prices,  
 And  $3X$  = the value per acre of improved land in 1910-14 prices,  
 Then  $4,877,739X$  = the value of all unimproved land in farms,  
 And  $19,227,969 (3X)$  = the value of all improved land in farms.  
 So that  $4,877,739X + 19,227,969 (3X)$  = the value of all farm  
 land, or \$1,330,876,139.

$$\begin{aligned} X &= \$21.27 \\ 3X &= \$63.81 \end{aligned}$$

## APPENDIX A

reported by the census or estimated by BAE for the census years 1870-1950.

### CONSTANT-PRICE VALUE OF BUILDINGS, 1870-1900

Before 1900, the value of farm buildings was not reported separately in the census. To estimate constant-price values of farm buildings for 1870, 1880, and 1890, it was assumed that the physical inventory of buildings *per farm* in each state was the same in each of the three preceding census years as it was in 1900. The value of buildings per farm in each state as reported in the 1900 census was multiplied by the number of farms in the state in 1870, 1880, and 1890.<sup>6</sup> These values, together with those reported in the 1900 census, were then raised 26 per cent, an adjustment indicated by the rise in cost of construction on farms from 1900 to 1910-14.<sup>7</sup>

### CONSTANT-PRICE VALUE OF LAND AND BUILDINGS, CENSUS YEAR 1910 AND AFTER

For the census year 1910 and later, at least two methods of estimating constant-price values of farm real estate by states are possible. The simplest procedure is to divide the value of farm real estate reported in the census by the index of value per acre of land and buildings (1912-14 = 100) constructed by BAE from crop-reporter estimates. Both the current values of land and buildings and the index are available by states. However, this operation produces results which, in numerous instances, are clearly biased—probably because the data in the dividend are not fully comparable with the data used in calculating the divisor. Moreover, the base of the divisor (1912-14) differs slightly from the constant-price base used in the present study. Hence, the results obtained by this method were used only as

<sup>6</sup> This may have resulted in some overstatement of the physical inventory of buildings for the earlier years, especially in regions that were relatively newly settled in 1870. In these areas it is likely that some service buildings were added on established farms, or that some smaller temporary buildings gave way to larger, more substantial ones. On the other hand, such additions and improvements were probably somewhat restricted before 1900 because of the persistent and general decline in the prices of farm products that characterized most of the period. Depreciation of farm buildings usually exceeds expenditure on construction and repair during periods of agricultural depression. If an overstatement of the physical inventory has resulted from the method used, it is believed to be small.

<sup>7</sup> Estimate based on a 19 per cent rise in the Warren and Pearson index of wholesale prices of building materials, a 47 per cent rise in the composite farm-wage-rates index, and a 45 per cent rise in hourly earnings in building trades. The percentage increases in wages were averaged and combined with the percentage increase in building materials. Weights of 1 and 3 were used in averaging wages and costs of material.

## APPENDIX A

a rough check on those obtained by application of the method described below.

For land, the same procedure was used in 1910 and after, that was used before. The constant-price values of buildings for the census years 1910-50, were estimated, by states, as follows.

The values of farm buildings in the United States for the census years 1910-50, calculated in 1910 prices by BAE, were raised 1 per cent to place them on the 1910-14 price level.<sup>8</sup> This slight increase was suggested by the Bureau's farm-construction cost indexes. These adjusted constant-price values, which reflect changes in the number and condition of farm buildings, were then prorated to the states on the basis of each state's proportion of the current value of farm buildings in the United States. These current values were reported in the census by states except for 1935, 1945, and 1950; for these three years the current values were estimated.

The usefulness of this method may be questioned on the ground that depreciation and new construction—especially the latter—are likely to proceed at somewhat different rates in the several states and regions. Three considerations, however, support the belief that error from this source is small. First, by 1910 settlement was fairly complete, even in the most westerly states to which this method was applied. Hence the establishment of new farms that required construction of entire

<sup>8</sup> In calculating these values, BAE started with the value of buildings reported in the 1910 census and extended the series by adding each year expenditures on buildings, wells, windmills, and fences, and subtracting depreciation, each in terms of 1910 prices. Rates of depreciation, based on average length of life, are 3.6 per cent for operators' dwellings and 6 per cent for other farm structures. The inclusion of expenditures and depreciation on wells, windmills, and fences affects somewhat the comparability of the estimates for 1920 and later with those of 1910 and earlier. The effect must, however, be small in view of the fact that such expenditures are estimated at only 14 per cent of the total and that depreciation largely offsets the expenditures.

For greater detail of the method by which the value of farm buildings in 1910 prices are calculated see *Expenditures for and Depreciation of Permanent Improvements on Farms, 1910-40* (this is Section 5 of Part II of *Income Parity for Agriculture*, Dept. of Agriculture, 1941). A more condensed description may be found in *The Agricultural Estimating and Reporting Services of the USDA* (Dept. of Agriculture, Misc. Pub. 703, pp. 153-154).

The implicit price deflator for buildings (1910-14 = 100) that this method yields rises from 153 to 180 between 1920 and 1930, and drops only to 166 in 1940, so that 1940 is also above 1920 (see Chart 7). The BAE construction cost indexes for farm dwellings and service buildings, on the other hand, are much lower in 1930 than in 1920, and still lower in 1940. However, costs in 1920 were at an exceptionally high level relative to preceding (or succeeding) years; it is conceivable that the prices of farm buildings as a whole were higher in 1930 than in 1920. But it seems unlikely that building prices in 1940 were above the 1920 level. Our constant-price estimates for 1940 and possibly 1930 may therefore be too low.

## APPENDIX A

sets of new buildings would not vary greatly from region to region. Second, the changes in economic conditions that were important enough to influence farm construction from one census year to another were generally nationwide rather than regional. Finally, any variation in rate of new construction and depreciation that may nevertheless have occurred influences the percentage of the total current values of buildings for the United States, represented by the current values of buildings in each state at census years, and hence is reflected in the final estimates.

### *Procedure in the Eleven Western States*

In estimating constant-price valuations of farm real estate in the eleven western states, it seemed necessary to distinguish between three classes of farm land—irrigated, dry-farming, and grazing land.<sup>9</sup>

The procedure was to calculate per acre values of land and buildings at 1910-14 prices for each of the three classes in each state, and to multiply these by the number of acres of the corresponding class at census years.<sup>10</sup>

Values per acre for the three classes of farm real estate in each of the western states are available in the annual estimates made since 1926 by crop reporters of BAE. Relationships among the values of these three classes at about the time of the 1930 census were assumed to apply also in the base period 1910-14. Accordingly, three-year averages centering on 1930 were compiled for each class of real estate from crop reporters' estimates. These averages were adjusted so that when they were multiplied by the respective number of acres reported in the 1930 census the sum of the products equaled the census-reported value of all farm land and buildings in 1930. Adjusted three-year averages were used to reduce distortion that might result from the limited number of farms covered by the estimates of crop reporters in any one year.

By assuming that the values per acre of irrigated, dry-farming, and grazing land in 1910 bore the same relation to each other as the adjusted averages just described, it was possible to calculate the value per acre for each class in 1910. The data utilized for this purpose were the census-reported acreages for the three classes, the value of all land and buildings in 1910, and the adjusted averages described above. The calculations were similar to those described in footnote 5

<sup>9</sup> In the Pacific states dry-farming land includes cultivated land that is not irrigated but is well watered by rain.

<sup>10</sup> I am indebted to William H. Scofield of BAE for suggestions and data useful in developing the method described below.

for land alone. The final step was to raise the values so computed for each western state to the 1910-14 level by dividing them by an index for each state based on the value per acre of all farm land and buildings in 1910-14. This gave constant prices for irrigated, dry-farming, and grazing land, which were then multiplied by the respective acreages in each census year.

Acreages of the three classes were partly estimated. Acreage of irrigated land has been reported in the census beginning with 1890, but it was necessary to estimate the acreage under irrigation in 1870 and 1880.<sup>11</sup> Acreage of dry-farming land was estimated by subtracting irrigated acreage from improved acreage in farms. Grazing land was estimated as the difference between all land in farms and improved land.

### *Supplementary Note*

Clues to the relative value of improved and unimproved land more or less applicable to the period 1910-14 are as follows:

1. Lake States, 1914: In *Costs and Methods of Clearing Land in the Lake States* (Dept. of Agriculture, Bull. 91, 1914) Thompson and Strait provide a comparison of value per acre of improved and logged-off land in twenty counties of Minnesota, in thirty counties of Wisconsin, and in forty-four counties of Michigan. The value per acre of improved land does not include the value of farm buildings. In Minnesota the value of improved land was \$26.71 per acre and that of logged-off land \$9.95 per acre, indicating a ratio of 2.7 to 1. In Wisconsin the values of the two types were \$43.35 and \$13.62 respectively, indicating a ratio of 3.2 to 1. In Michigan they were \$56.78 and \$11.85, making a ratio of 4.8 to 1. The authors summarized their findings as follows:

At the present time (1914) very little logged-off land that would make desirable farm land can be bought for less than \$15 to \$25 an acre. As the cost of clearing varies from \$20 to \$90 per acre the cost of farm land cleared of stumps will run from \$35 to \$115 per acre, the average being about \$65.

This indicates a ratio of about 3.3 to 1 for the region.

2. Mississippi, 1915, 1917: In 1915, the assessed value of cultivated land in Mississippi averaged \$7.26 per acre; wild and uncultivated land averaged \$3.07 per acre exclusive of standing timber;

<sup>11</sup> Mainly by extrapolating ratios of irrigated to improved land. However, in Utah irrigated acreage was reported for both years in C. H. Brough, *Irrigation in Utah* (Johns Hopkins Press, 1898). An estimate of irrigated acreage in Colorado in 1884 published in Elwood Mead, *Irrigation Institutions* (Macmillan, 1910), influenced our estimate for 1880.



## APPENDIX A

the value of the timber averaged \$1.82 per acre of wild and uncultivated land. In 1917, the Mississippi Tax Commission improved the assessment procedure of the state, thereby raising the 1917 assessment, made by the old method, by 18.1 per cent for cultivated land, 7.7 per cent for wild and uncultivated land, and 9.7 per cent for timber standing on the latter. Application of these correction factors to the per acre assessed values of 1915 raises them to \$8.57, \$3.31, and \$1.99 respectively. In 1917, after prices of cotton not only had recovered from the sharp drop of 1914 but also had advanced quickly to levels that had not been reached for more than forty years, the average assessed values per acre for the two classes of land and for standing timber were \$17.47, \$4.48, and \$2.79 respectively. It is probably correct to assume that valuable standing timber was mainly on large tracts not in farms. If, then, the value of standing timber is ignored, the value per acre of improved land in 1915 was 2.6 times the value of unimproved land. In 1917, the value per acre of improved land was 3.9 times that of unimproved land. In view of the possible influence on land prices of the severe depression of cotton prices following the outbreak of war in Europe in 1914, and the high prices of cotton in 1917, a ratio of 3 to 1 for the per acre value of improved to unimproved land in Mississippi seems defensible.

3. Missouri, 1910-15 and 1910-31:<sup>12</sup> Data from the sales records of forty-six farms sold during 1910-15 in Mississippi County, Missouri, are contained in an unpublished report by BAE entitled "Farm Appraising in the Birds Point New Madrid, Missouri, Floodway." Acreage in these farms totaled 8,655, of which 4,073 were cleared and 4,582 were woodland. The average price per acre, including buildings, was \$38; of cleared land with buildings, \$61; and of woodland, \$18.

Values of the buildings on the forty-six farms are not reported separately, but if it is assumed that the average value of these buildings equaled the average for the county in which they were located in 1910 (adjusted for the difference in census values and appraised values suggested by the difference in the value per acre of land and buildings, and for moderately rising real estate prices throughout the period), a value of buildings per acre of cleared land of about \$5 appears likely. This indicates that the average value per acre of cleared land without buildings was about \$56, or 3.1 times the value per acre of woodland.

The same report presents data from the sales records of 186 farms (including the above forty-six) sold during 1910-31, as follows:

<sup>12</sup> I am indebted to Hugh H. Wooten of BAE for calling attention to the studies of land values in Missouri, Tennessee, Louisiana, and Arkansas referred to in this appendix.

APPENDIX A

	<i>Acres</i>	<i>Average Price per Acre</i>
Total	29,663	\$56
Cleared	19,858	73 (including buildings)
Woodland in farms	9,805	22

Value of buildings per farm in Mississippi County, Missouri as reported in the 1910, 1920, and 1930 censuses, were adjusted to the level of the values in the report, averaged, and applied to the 186 farms. These calculations indicate a value of buildings of about \$6 per acre of improved land. On this basis, the value per acre of cleared land without buildings averaged \$67, or three times the value of the woodland in farms.

4. Louisiana and Arkansas, 1930: A "Report Submitted by the Department of Agriculture to the Secretary of War on the Valuation of Property between the Proposed Protective Levees of the Boeuf and Atchafalaya Basins, and in the Red River Backwaters" deals with a total of 3,696,695 acres in twenty-two counties in Louisiana and four counties in Arkansas, of which 705,426 acres were cleared and the remainder were woodland.<sup>13</sup> The average value per acre of the cleared land without buildings in 1930 is given as \$33.45, or 4.2 times that of woodland, which was appraised at \$8.01 per acre.

5. Tennessee, 1937: An unpublished BAE report entitled "Real Property Appraisals of the Norris Reservoir Purchase Area" covers 133,999 acres of farm land in five counties of northeastern Tennessee. The 72,388 acres of cleared land are valued, without buildings, at \$43.70 per acre; the woodland and timber are valued at \$18.80 per acre. The value per acre of the cleared land (without buildings) is 2.3 times that of the woodland.

6. South Carolina, 1934: In 1934 the first purchases of the United States Forest Service in South Carolina included fifty-seven tracts in the Enoree Purchase unit, each of which contained some plow land. The total acreage involved was 36,000, of which 13 per cent was plow land. Prices paid for plow land averaged \$8.81 per acre, or 3.3 times the \$2.67 average paid for uncultivated land.

7. North Carolina, 1934: At the same time that the fifty-seven tracts were purchased in South Carolina, the Forest Service bought five tracts in the Uwharrie unit in North Carolina, comprising 3,808 acres. The price per acre paid for plow land was \$9.10; for uncultivated land, \$2.90. The ratio here was 3.1 to 1.

<sup>13</sup> Much of this was published in *Control of Floods in the Alluvial Valley of the Lower Mississippi River*, H. Doc. 798, 71st Cong., 3d Sess., 1931, Vol. 2, Annex 20, pp. 1519-1558.

## APPENDIX B

### Extension of BAE's Index of Prices Paid by Farmers for Machinery, and, Beginning with 1920, Expansion of the Coverage to Include Motor Vehicles with Other Farm Machinery

THE Bureau of Agricultural Economics has calculated index numbers of prices paid by farmers for implements and machinery exclusive of motor vehicles beginning with 1910, and a similar index for motor vehicles beginning with 1924. Both series have as their base average prices in 1910-14, and both reflect the prices of new units only. The Bureau had earlier calculated another index of prices paid by farmers for motor vehicles, beginning with 1917. This is not fully comparable with its successor, but it affords a basis for extrapolation of the present index back to 1920.

Beginning with 1920, the index of prices paid for farm machinery and that of prices paid for motor vehicles were combined, using as weights the respective values of farm machinery and of motor vehicles owned by farmers. For 1910, when the number of motor vehicles on farms was negligible, the BAE index of prices paid by farmers for machinery exclusive of motor vehicles was suitable. For earlier census years it was necessary to resort to indexes of prices of goods which could reasonably be expected to move in a manner roughly similar to the prices paid by farmers for machinery. Thus F. C. Mills' "Index of Wholesale Prices of Processed Goods Entering into Capital Equipment," which begins with 1891, was linked to the BAE series to obtain an index for 1900, and, in turn, a simple average of the Warren and Pearson wholesale price indexes of (1) metal and metal products and (2) lumber was linked to Mills' index to obtain indexes for 1890, 1880, and 1870.<sup>1</sup>

The series that resulted from these steps is as follows:

<i>Year</i>	<i>Index</i> (1910-14 = 100)	<i>Year</i>	<i>Index</i> (1919-14 = 100)
1870	136	1925	150
1880	113	1930	148
1890	93	1935	149
1900	90	1940	159
1910	100	1945	195
1920	177	1950	294
		1955	334

<sup>1</sup> Frederick C. Mills, *Economic Tendencies in the United States*, National

## APPENDIX B

Strictly speaking, all machinery on farms is used machinery. Consequently the use of this index as a deflator of the current values reported by farmers to the census may at times result in some distortion, as the value of used machinery does not always move precisely with that of new machinery. During an agricultural depression prices paid for machinery at farm sales are often relatively lower than those paid to dealers of new machinery. Contrariwise, in time of high prosperity, particularly if, as in 1945, the supply of new machinery is inadequate, prices paid at farm sales are often relatively higher than those paid to dealers for new machinery. Consequently, the use of this price index, which in 1935 is slightly above and in 1940 substantially above the 1930 level (differing in that respect from the price deflators for all other capital items—see Chart 7), may have caused an appreciable understatement of the constant-price value of the stock of farm machinery in 1935 and 1940 relative to earlier and later years.<sup>2</sup> However, to the extent that the values reported to the census by farmers are influenced by the prices of new machinery, even in times when these prices are not in normal relation to prices of used machinery, distortion from this source is reduced.

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Bureau of Economic Research, 1932, p. 586; George F. Warren and Frank A. Pearson, *Prices*, Wiley, 1933, pp. 26, 30.

<sup>2</sup> According to our estimates, the value of farm implements and machinery in 1910-14 prices dropped 14 per cent between 1930 and 1940. The actual numbers of tractors, trucks, automobiles, and many other types of machines reported on farms increased between those years. But this does not necessarily mean that our estimates are wrong, for the low level of farmer purchases of new machinery during the depression may not have been sufficient to offset the depreciation on the stock of machinery in use. A thousand machines that are three years old on the average may not represent as great a stock of capital as 900 machines that are two years old.

## APPENDIX C

### Methods of Estimating the Value of Farm Implements and Machinery, 1935 and 1950

*1935*

The Bureau of the Census made no inquiry about farm implements and machinery in 1935, but the Bureau of Agricultural Economics has estimated the value of these items for the United States. The estimate for 1935 was distributed so that each state received a proportion of the total equal to the average proportion that it held of the 1930 and 1940 totals.

The method by which the values of automobiles, motor trucks, tractors, and other machinery on farms have been estimated on an annual basis for the United States is briefly as follows. To the 1910 census value for each type BAE has added purchases. Then depreciation has been calculated on these totals and subtracted from them. Finally, the depreciated values thus obtained have been adjusted for price changes and tied in with successive census benchmarks.

*1950*

The 1950 census did not report the value of farm implements and machinery, but BAE has estimated separately the value of automobiles, motor trucks, tractors, and other machinery on farms on January 1, 1950, for the United States in the manner described above for 1935. These estimated values were distributed to the states in the following manner.

The value of automobiles and of motor trucks for the United States was distributed to the states on the basis of cash receipts from farm marketings plus government payments 1945-49, and, separately, on the basis of census-reported numbers. The results of these two operations were averaged to obtain the final distribution by states.

The value of tractors for the United States was distributed to the states on a basis that took account of state differences in number, size (horsepower), and, except for garden types for which no basis was available, of remaining life of tractors. The number of wheel tractors, crawlers, and garden tractors was reported by the 1950 census, as were also the median years of purchase for wheel and crawler types. BAE has published estimates of the average horsepower in 1948 of wheel tractors, by states, and of crawlers for the Mountain and Pacific

## APPENDIX C

regions and for all other states combined.<sup>1</sup> In the absence of specific data for garden tractors an average horsepower of  $2\frac{1}{2}$  was assumed.

The procedure by which state estimates were made with the above-mentioned data was as follows. First, the remaining life of wheel tractors and crawlers was estimated by noting their average age and subtracting this from eighteen years—the assumed average life of tractors.<sup>2</sup> Then the number of tractors in each state was multiplied by the average horsepower, and this product (except in the case of the garden types) was multiplied by the remaining life to obtain weights that would reflect state differences in number, size, and age. Finally, the United States value as estimated by BAE was distributed to states on the basis of these weights.

State values of other implements and machinery were determined for 1950 by distributing the *increase over 1945* in the United States value of these items on the basis of the estimated concurrent increase in the value of tractors and by adding the state increments of value so derived to the state values already established for 1945. This was done on the theory that the increase in “other machinery” would be in proportion to the increase in tractors that propel it.

The “all implement and machinery” estimate was obtained by adding the values of the classes derived by the methods just described.

<sup>1</sup> *Fuel and Motor Oil Consumption and Annual Use of Farm Tractors*, Dept. of Agriculture, FM 72, 1950, Tables 8 and 9.

<sup>2</sup> This is indicated as the probable life of wheel tractors by data published by BAE in *Life of Farm Tractors*, Dept. of Agriculture, FM 80, June 1950.

## APPENDIX D

### Methods of Estimating the Number and Value of Chickens by States, January 1, Census Year, 1870-1920

#### *Number of Chickens*

FOR 1870, when no enumeration of poultry was made by the census, the number of chickens was estimated for the United States by extending to 1870 a curvilinear regression line drawn through the United States totals for 1910, 1900, 1890, and 1880 after these had been adjusted as described below. This estimate for the United States was prorated to the states on the basis of the 1880 distribution.

For 1880, 1890, and 1900 the numbers of chickens reported by the census for each state were adjusted to make them comparable to the Bureau of Agricultural Economics estimate for January 1 of 1925 and subsequent years. The census-reported numbers of 1880 were increased 38 per cent, those of 1890 were decreased 25 per cent, and those of 1900 were increased 12 per cent.<sup>1</sup> These adjustments, made necessary by differences in census dates and in the wording of the inquiries, presumably affected the enumeration in one state much the same as in any other.

For 1910 and 1920 the numbers of chickens in each state reported by the census were adjusted by applying a factor derived by relating the BAE estimate of the number of chickens in the United States on January 1 of these years to the number reported by census.

#### *Value of Chickens*

For the census years 1870-1900 a value per head was estimated for each state, and this was multiplied by the estimated numbers. The value per head was estimated by striking an average of the United States price per pound for the year immediately preceding and following January 1 of the census year, multiplying this by the United States average weight of chickens for that year, and applying to this product factors that represented for each state the average percentage that the price of chickens was of the United States price in 1925-29, the earliest five-year period for which this information is available.<sup>2</sup>

<sup>1</sup> Percentages are from estimates in S. A. Jones, *Farm Value, Gross Income and Cash Income from Farm Production*, Part II, *Method and Procedure in Estimating Production Disposition and Income from Poultry and Eggs*, Bureau of Agricultural Economics, December 1930.

<sup>2</sup> United States average prices and weights from Frederick Strauss and Louis H. Bean, *Gross Farm Income and Indices of Farm Production and Prices in the United States, 1869-1937*, Dept. of Agriculture, Tech. Bull. 703, 1940,

#### APPENDIX D

For 1910 and 1920, BAE estimates of the value of chickens in the United States on January 1 are available. These totals were distributed to the states in the same proportions that the census-reported state values were of the respective United States values.

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p. 101. State and United States prices for 1925-29 from which the factors were derived, from *Farm Production and Disposition of Chickens and Eggs, 1925-37*, BAE, 1938.



## APPENDIX E

### Methods of Estimating the Volume and Value of Crops Stored on Farms by States, January 1, Census Years, 1870-1950

THE current values of crops stored on farms on January 1 of census years, 1870-1900, were obtained by multiplying average prices received by farmers in each state on December 1 of the year preceding a census year by the estimated volume held on farms on the following January 1.<sup>1</sup> For 1910 and subsequent years, December 15 prices<sup>2</sup> were available and were multiplied by January 1 stocks.

The figures on volume of crops used in the foregoing calculations are in part published estimates of the Bureau of Agricultural Economics, in part estimates made for this study. The published state estimates cover the following crops and census years: tobacco, 1910 and later; wheat, corn, and oats, 1930 and later; hay, barley, peanuts, and flaxseed, 1940 and later; rice, edible beans, sorghum for silage and corn for silage, 1945 and later. The other estimates have been made by methods described below.

In most instances state ratios of the volume of individual crops stored on farms on January 1 to production of the preceding year were averaged for the earliest five-year period for which both production and stocks on farms on January 1 were available. These state ratios were then applied to the state crop-production data reported by the census for the year preceding each of the census years for which estimates were desired.

The five-year periods which provided the ratios of individual crops to production are as follows:<sup>3</sup> tobacco, 1910-14; wheat, corn, and oats,

<sup>1</sup> *Prices of Farm Products Received by Producers*, Dept. of Agriculture, Bulls. 14, 15, 16, and 17, 1927.

<sup>2</sup> From BAE work sheets. These prices have been published by BAE from time to time in *Agricultural Prices*.

<sup>3</sup> During the five-year period for which average ratios of stocks on farms on January 1 to production of the preceding year were calculated, parts of some of the minor crops stored on farms were under CCC loan. This was a factor not present in most of the earlier years for which estimates are made by use of these ratios. However, the influence of such loans on the estimates of the volume of these minor crops on farms seemed too small to warrant an attempt to remove them by adjustments which at best would be based on assumptions, not on facts. Failure to adjust for these loans could hardly affect significantly the final state estimates of farm capital invested in crops for the following reasons: (1) The problem does not exist for the major crops, which include corn, wheat, oats, hay, cotton, and tobacco. (2) Only a part of the minor crops is affected. (3) Of the minor crops affected, such loans were found to have been outstanding during only part of the five-year period. (4) The fraction of the crop stored on farms which was under loan was in most instances small.

## APPENDIX E

1927-31; hay, 1938-42; barley, peanuts, and flaxseed, 1940-44; rice, 1942-46, dry edible beans, sorghum for silage, and corn for silage, 1944-48.

There are no official estimates of January 1 stocks of cotton stored on farms; hence the stocks of cotton lint and cottonseed on January 1, 1910 and subsequent census years were estimated by subtracting the amount sold before January 1 from the amount produced in the year preceding the census. For census years preceding 1910, first-of-the-year stocks were estimated by applying a five-year (1909-13) average percentage of crop sold before January 1 in each state to the amount produced in the year preceding each census and, by subtraction, obtaining the amount left on farms.

The following crops appear on one or more of the state lists: wheat, corn, oats, barley, rice, peanuts, flaxseed, soybeans, dry edible beans, hay, corn for silage, sorghum for silage, cotton lint, cottonseed, and tobacco.

The number of crops listed for the various states differs somewhat, because crop production is much more specialized in some states than in others. The plan was to list for each state every crop that was likely to be stored to any significant extent on January 1 and that constituted 3 per cent or more of the crop production of the state. But no plausible basis was found on which to estimate farm storage of potatoes and horticultural crops. It is possible that in some states these would be in the list were the facts known. As crop production changed over the years, the state lists are not necessarily uniform for the entire period.

## APPENDIX F

### Methods of Adjusting Census Enumerations of Persons Engaged in Agriculture by States to Improve Accuracy and Comparability of Regional Estimates of the Farm Labor Force

Two types of adjustment were necessary to increase the accuracy and comparability of the census enumeration of persons engaged in agriculture in each state. To increase accuracy, it was necessary to distribute to the states the estimates of undercounts and overcounts in certain years made by the census for the entire country, and of an undercount confined to thirteen southern states in 1870. Similarly, census estimates of the number of farm laborers in the United States who, for lack of adequate information on the schedules, had in several census years been consigned to a mixed group designated "laborers (not specified)" had to be distributed among the states.

In order to make the enumerations for the various years reasonably comparable it was necessary (1) to remove from the agricultural category some types of workers which had been included in some years but not in others, and which also tended to impair the homogeneity of the class and (2) to adjust the 1940 and 1950 data to include workers in the ten to thirteen-year age group.

When the state data were so adjusted, their sums (except for 1940) differed only slightly from those reported by the census.<sup>1</sup> After the adjusted state data were combined into regional totals, the latter were forced slightly to make them completely comparable with the census-reported farm labor force of the United States. Forcing the 1940 regional data, which added up to a United States total 5 per cent lower than the census-reported number, probably took care, in a rough way, of a known deficiency in our original regional estimates for that year—the omission of members of the farm labor force who were temporarily doing public emergency work.

The adjustments of the state data that have been made in arriving at the estimates in Table 5 are listed in detail below. It will be noted that an adjustment of territorial data was made for 1870.

<sup>1</sup> A. M. Edwards, *Comparative Occupation Statistics for the United States 1870-1940*, 1943, p. 104, and (for 1940) *Historical Statistics of the United States, 1789-1945*, 1940, p. 63, both Bureau of the Census.

## APPENDIX F

1870

1. "Turpentine farmers" and "turpentine laborers" were subtracted from the category "agriculture."

2. To correct an undercount of 314,833 agricultural workers in the thirteen southern states,<sup>2</sup> the 314,833 were distributed to the thirteen states on the basis of the proportion that each state's agricultural workers, as previously reported, formed of the previously reported thirteen-state total of these workers.

3. The 616,527 "laborers (not specified)" omitted from the category "agriculture" were distributed.<sup>3</sup> The procedure was the same as in the second adjustment, except that the United States rather than thirteen southern states constituted the base.

4. The 52,755 persons lumped together under "The Territories" were distributed to the individual territories on the basis of the percentage distribution of the number of farms in 1870 for the same territories.

1880

1. "Turpentine farmers and laborers" were subtracted from the category "agriculture."

2. The 925,421 "laborers (not specified)" were added to the persons engaged in agricultural pursuits.<sup>4</sup> This was done by prorating the 925,421 persons to the states on the basis of the proportions that each state had of the total before this adjustment was made.

1890

1. From the numbers reported by the census as engaged in "agriculture, fisheries, and mining" were subtracted the numbers listed as "fishermen and oystermen," "lumbermen and raftsmen," "miners," "quarrymen," and "woodchoppers."

2. Turpentine farmers and laborers were not listed as such in the 1890 Census of Population, but were included in "other occupations"—a residual class under "agriculture, fisheries, and mining." Later the Bureau of the Census estimated their number at 13,571. In order to remove these turpentine farmers and laborers from agricultural workers, by states, it was necessary to allocate them to the states. This was done by averaging the percentages that each state's turpentine farmers and laborers were of the United States workers of that type in 1880 and 1900, and applying these state average percentages to

<sup>2</sup> Reported in Edwards, *op.cit.*, p. 141.

<sup>3</sup> *Ibid.*, p. 144.

<sup>4</sup> *Ibid.*

## APPENDIX F

the 13,571 estimated to have been in this category in the United States in 1890. The numbers thus distributed to the states were subtracted from the numbers reported under "agriculture, fisheries, and mining."

3. The "laborers (not specified)" of 1890 allocated to agriculture by a later census study numbered 909,740.<sup>5</sup> These were distributed to the states in the manner described for the "laborers (not specified)" of 1880.

4. To correct an undercount of 582,522 persons in the ten to fifteen age group reported later by the census as employed on farms,<sup>6</sup> this number was prorated to the states on the basis of the distribution of the unadjusted United States total in this age group.

### 1900

1. From the numbers listed by the census under "agricultural pursuits" were subtracted the numbers representing "lumbermen and raftsmen," "turpentine farmers and laborers," and "woodchoppers."

2. The 670,702 "laborers (not specified)" allocated to agriculture by a later census estimate were distributed to the states in the manner described for 1880.<sup>7</sup>

### 1910

1. From the numbers reported by the census as employed in "agriculture, forestry, and animal husbandry" were subtracted the numbers reported as "fishermen and oystermen," "foresters," "lumbermen, raftsmen, and woodchoppers," "owners and managers of log camps," and "turpentine farmers and laborers."

2. An adjustment was made to correct an overcount of 796,542 farm workers.<sup>8</sup> Of these, 165,557 were boys ten to fifteen years old; 202,942 were girls of ten to fifteen; and 428,043 were women sixteen years of age and older. These sex-age groups in each state were reduced by the percentage that the United States total for each group was reduced.

### 1920

1. "Turpentine farmers, laborers, and foremen," "fishermen and oystermen," "foresters," "lumbermen, raftsmen, and woodchoppers," and "managers of log camps" were subtracted from the number reported in the category "agriculture."

<sup>5</sup> *Ibid.*

<sup>6</sup> *Census of Population, 1900, Special Reports, "Occupations," Table XI, p. lxxi.*

<sup>7</sup> Edwards, *op.cit.*, p. 144.

<sup>8</sup> *Ibid.*, pp. 137-138.

## APPENDIX F

2. An adjustment was made to correct an undercount of 782,958 farm workers consisting of 352,132 men sixteen years and over; 343,825 boys of ten to fifteen; 12,001 girls of ten to fifteen; and 75,000 women sixteen years and over.<sup>9</sup> The sex-age groups in each state were increased by the percentage that the corresponding groups for the United States were increased when the above numbers were added to totals originally reported.

### 1930

In 1930 "agriculture" included farmers (owners and tenants), farm managers and foremen, and farm laborers. There were no known undercounts or overcounts. Hence the state data were accepted as published, and those of other years were made comparable by the adjustments described in this appendix.<sup>10</sup>

### 1940

1. For 1940 "farmers and farm managers" were added to "farm laborers and foremen" to obtain a total comparable with earlier years.

2. In 1940 only those agricultural workers who were fourteen years old or over were listed by census enumerators. In order to make the data comparable with earlier census years it was necessary to expand the number reported as working on farms in 1940 so as to include the ten to thirteen age group. This was done by fitting a regression curve to the proportion that the ten to thirteen age group was of total agricultural workers in each region for the years 1910, 1920, and 1930, and extending the curve to 1940. Each regional percentage thus obtained was used to expand the 1940 labor force of the states comprising the region.

### 1950

The only adjustment necessary to make the state enumerations of "farmers and farm managers" plus "farm laborers and foremen," published in Volume II of *Census of Population, 1950*, comparable with the numbers of earlier years was to include an estimate of the ten to thirteen age group. This was done by extending to 1950 the regression curves mentioned in the description of adjustments for 1940.

<sup>9</sup> *Ibid.*, pp. 138-140.

<sup>10</sup> 1930 *Census of Population*, vol. V, *General Report on Occupations*, Table 10, p. 56.

APPENDIX F

The results of these adjustments for 1940 and 1950 are as follows:

Persons Engaged in Farming, Ten to Thirteen Age Group  
(thousands)

<i>Region</i>	<i>1940</i>	<i>1950</i>	<i>Region</i>	<i>1940</i>	<i>1950</i>
Northeast	1	<sup>a</sup>	Great Plains	1	1
Appalachian	25	19	Texas-Oklahoma	9	6
Southeast	34	14	Mountain	1	1
Lake States	1	1	Pacific	0	0
Corn Belt	1	1			
Delta States	39	25	United States	112	68

<sup>a</sup> Less than 500.

## APPENDIX G

### Value of Physical Farm Assets in 1929 Prices

THE constant-price valuations found elsewhere in this paper are stated in terms of 1910-14 average prices. This base was chosen because most of the basic price and value series related to farming are based either on 1910-14 or on one or more years included in that period.

In order to facilitate comparison and combination with similar data developed in other sector studies of this series, the values of the major classes of physical farm assets have also been computed in 1929 prices (Table G-1). These values were obtained in the following manner.

TABLE G-1  
Value of Physical Farm Assets in 1929 Prices, by Selected Groups,  
United States, Census Years, 1870-1950  
(*millions of dollars*)

<i>Year</i>	<i>Farm Real Estate</i>	<i>Implements and Machinery</i>	<i>Livestock</i>	<i>Stored Crops</i>	<i>Total Physical Farm Assets</i>
1870	19,422	374	3,370	867	24,033
1880	27,160	542	4,632	1,582	33,916
1890	32,070	797	6,053	2,198	41,118
1900	38,880	1,250	6,377	2,589	49,096
1910	43,815	1,917	6,639	2,685	55,056
1920	47,188	3,072	7,538	3,043	60,814
1925	46,128	2,719	6,878	2,836	58,561
1930	47,451	3,369	6,660	2,856	60,336
1935	47,365	2,175	6,658	1,713	57,911
1940	47,276	2,915	6,795	3,063	60,049
1945	48,338	4,812	7,608	3,671	64,429
1950	50,319	6,638	6,621	3,961	67,539

Source: See method in this appendix.

The values of land and buildings, calculated in 1910-14 prices by methods described in Appendix A, were raised 19.7 per cent. This increase is indicated by estimates made by BAE of the value per acre of all farm land and improvements in the period 1910-14 and in 1929. These estimates are based on information supplied by crop reporters and are believed to apply to land and improvements of approximately the same quality.

Current values of implements and machinery as reported by the census or estimated by BAE were divided by an index (1929 = 100) of prices paid by farmers for machinery (including automobiles, motor



APPENDIX G

trucks, and tractors). Such an index was calculated by converting the index based on 1910-14, described in Appendix B, to a 1929 base. The two series follow:

<i>Year</i>	<i>1910-14 = 100</i>	<i>1929 = 100</i>
1870	136	90
1880	113	75
1890	93	62
1900	90	60
1910	100	66
1920	177	117
1925	150	99
1929	151	100
1930	148	98
1935	149	99
1940	159	105
1945	195	129
1950	294	195

The price per head on January 1, 1929 of each major class of livestock was multiplied by the number in the respective class on January 1 of each census year. These values, by classes, were aggregated for the total.

For stored crops, the price per unit (bushel, ton, bale) on December 15, 1928 for each crop was multiplied by the respective number of units on farms on January 1 of each census year, and these products were aggregated.

## APPENDIX H

### Methods Used in Estimating Gross Farm Income in Constant Prices by Regions for Precensus Years, 1869-1949

A NUMBER of measures of farm production are available which differ more or less in concept and in the time span which they cover. The purpose of this appendix is to describe these, and to describe, compare, and evaluate the estimates of gross farm income that we use, especially those made for geographic regions.

#### *Available Measures of Farm Production*

##### GROSS FARM INCOME (STRAUSS AND BEAN)

Strauss and Bean have constructed indexes of total farm production and of prices of farm products and have also estimated gross farm income for the United States as a whole for the years 1869 to 1937.<sup>1</sup> The authors' procedure involved, essentially, estimating annual production and the average farm price for each farm product. The production of each commodity multiplied by the farm price gave the "farm value" for that commodity. Farm value after subtracting the value of crops fed to livestock and used for seed gave "gross income," a concept defined as "the value (at farm prices) of the farm products sold by producers to the nonfarm economy and of the products (at the same farm prices) consumed in the producers household."<sup>2</sup>

Strauss and Bean did not succeed in eliminating all double counting that arises in connection with sales by one farmer to another. For example, in the case of grain crops interfarm sales for seed and feed were not eliminated. On the other hand, interfarm sales of livestock were eliminated by including in gross income only the value of livestock slaughtered and exported. This method eliminates income from sale of cattle to feeders and avoids the double counting that would occur if this income were added to the income received when animals are sold for slaughter. The Strauss-Bean gross income data are adjusted for changes in the value of inventories of livestock on farms. The estimates of annual income derived from crops involve marketings in the given calendar year (including any sales of prior years' crops) and do not reflect changes in crop inventories.

<sup>1</sup> Frederick Strauss and Louis H. Bean, *Gross Farm Income and Indices of Farm Production and Prices in the United States, 1869-1937*, Dept. of Agriculture, Tech. Bull. 703, 1940.

<sup>2</sup> *Ibid.*, p. 7.

## GROSS FARM INCOME (BAE)

Annual estimates of gross farm income and its components have been made by BAE (succeeded in 1953 by the Agricultural Marketing Service) for the United States for 1910 and later years and by states for 1924 and later years. A special estimate of United States total gross farm income for 1909 was prepared for this study.

The BAE "realized gross farm income" concept has four major components: (1) Cash receipts from marketing of crops, livestock, and livestock products; (2) government payments to farmers; (3) market value of farm products consumed in farm homes; and (4) rental value of farm dwellings. The BAE data also contain estimates of the value of net changes in inventories of crops and livestock.<sup>3</sup>

This series, like the one estimated by Strauss and Bean, is not entirely free of double counting, since BAE's "cash receipts from farm marketings" do not exclude all interfarm sales of farm products to be used in further agricultural production. For example, cash receipts from marketings of crops include all receipts from sales of crops to other farmers, and cash receipts from marketings of livestock similarly include all receipts from livestock sales by farmers except those sales outside of public stockyards by one farmer directly to another in the same state. Consequently, the BAE gross income estimate is larger than a strict measure of the agricultural product should be by the amount of all feed and seed sold by farmers to other farmers, by the amount of interstate sales of livestock by farmers to other farmers, and by the amount of livestock sold by one farmer to another in the same state through public stockyards. Practically speaking, the duplication in the case of livestock is largely confined to interstate sales of stocker and feeder livestock through public stockyards.

## INDEXES OF GROSS FARM PRODUCTION, OF FARM OUTPUT, AND OF PRODUCTION FOR SALE AND FOR CONSUMPTION IN THE FARM HOME (BAE)

Annual indexes of "gross farm production" and of "farm output" are available for the United States for the years 1910 to date and for census geographic regions for 1919 and later years.<sup>4</sup>

<sup>3</sup> *The Agricultural Estimating and Reporting Services of the United States Department of Agriculture*, Dept. of Agriculture, Misc. Pub. 703, 1949, pp. 145-152.

<sup>4</sup> Glen T. Barton and Martin R. Cooper, *Farm Production in War and Peace*, Bureau of Agricultural Economics, Dept. of Agriculture, 1945; and *Changes in Farm Production and Efficiency*, Dept. of Agriculture, Agricultural Research Service, PERB3, 1954.

## APPENDIX H

These farm production indexes are available by regions by major groups of products. The crop indexes measure the constant-dollar value of all crop production regardless of its final disposition, and no deductions are made for seed or for crops fed to livestock. Indexes of the production of livestock and of livestock products measure the sum of the constant-dollar values of pasture consumed, other feed consumed, and the product added in converting feed and pasture into livestock and livestock products for human use. Another production measure is the constant-dollar value of feed other than pasture consumed by farm horses and mules. The indexes of "gross farm production" measure total crop production, pasture consumed by all livestock, and product added in conversion of feed and pasture into livestock and livestock products and into farm-produced power of horses and mules. The indexes of "farm output" measure the volume of farm production available for human use. They are based on the constant-dollar value of all crop and livestock production less that of feed other than pasture consumed by farm horses and mules, by other livestock, and by hay seeds, pasture seeds, and cover-crop seeds. These indexes measure output in the year in which it was produced (which may differ from the year in which it was sold) and take into account changes in inventories of livestock.

In constructing the production and output indexes BAE used average values per unit for 1935-39 as weights for the years 1919 to 1939. Beginning in 1940 weighted values per unit for 1947-49 were used, and the series were spliced together in 1940 through the use of overlapping calculations for that year.

Indexes of the volume of agricultural production for sale and for consumption in the farm home, constructed by BAE, are available by products for the United States as a whole for the years 1909 to 1952.<sup>5</sup> The livestock and livestock products indexes measure marketings plus home consumption, and so include the total quantity of feed and pasture consumed by livestock in a given year plus the value of the product added by livestock above the feed and pasture consumed. The crop indexes measure total crop production minus quantities retained for feed and seed on farms where grown. Nevertheless, the index of production for sale and home consumption includes some duplication of crops. Similarly, feeder and stocker livestock, if sold by one farmer to another, are counted twice. The indexes are not adjusted for changes in inventories of livestock.

<sup>5</sup> See Barton and Cooper, *op.cit.*, pp. 66-71, for discussion of the comparability of the indexes of gross farm production, farm output, and production for sale and home consumption.

## APPENDIX H

### NET OUTPUT IN AGRICULTURE (BARGER AND LANDSBERG)

Barger and Landsberg in their study, *American Agriculture, 1899-1939*,<sup>6</sup> present indexes of "net output" in agriculture. The indexes are available by major farm products for the United States for the years 1897 to 1939. "Net output" is defined to exclude farm products consumed on the farm itself in the productive process. The net output of crops represents the harvested portion less any amounts used for seed or feed on the farm where grown. However, they were usually unable to exclude feed or seed sold by one farmer to another. Net output of livestock was defined as the liveweight of animals slaughtered plus changes in inventories. Milk output represented total farm production of milk less milk fed to calves, and egg output was calculated by subtracting eggs used for hatching from total egg production. Insofar as possible Barger and Landsberg attempted to construct an index of output net of agricultural products consumed in farming and one that represents production available for human use on and off the farm.

### AGRICULTURAL PRODUCTION (BUREAU OF LABOR STATISTICS)

Indexes of agricultural production and of output per worker were constructed by the National Research Project of the Works Progress Administration for the years 1909-36, and this series was extended through 1950 (and is being continued) by the Bureau of Labor Statistics.<sup>7</sup> The indexes are available by major commodity groups for the United States and for eleven major farming areas. In the BLS indexes of agricultural production, man-hour labor requirements per unit of production in the base period are used as weights, whereas in all other indexes of agricultural production discussed in this appendix prices are used as weights. Duplication of livestock feed production is avoided by excluding from livestock labor requirements labor used in raising feed for livestock. The BLS production index does not include labor used for raising and maintaining horses and mules, but all feed for horses and mules except pasture is included. As a result, the BLS index of total agricultural production measures more than the agricultural product for human use because it includes production of grain and hay to be fed to farm horses and mules.

<sup>6</sup> Harold Barger and Hans H. Landsberg, *American Agriculture, 1899-1939: A Study of Output, Employment, and Productivity*, National Bureau of Economic Research, 1942.

<sup>7</sup> Raymond G. Bressler, Jr., and John A. Hopkins, *Trends in Size and Production of the Aggregate Farm Enterprise, 1909-36*, Works Progress Administration, 1938; and *Productivity in Agriculture, 1909-1947*, Bureau of Labor Statistics, 1948.

## APPENDIX H

### FARM OUTPUT NET OF INTERMEDIATE PRODUCTS (DEPARTMENT OF COMMERCE)

The Department of Commerce has estimated "gross national farm product" in constant and current prices for the period 1910 to date.<sup>8</sup> By excluding all intermediate products used in agricultural production, whether originating in agriculture or elsewhere, amounts were obtained that represent "value added" by agricultural operations instead of total agricultural production. Thus, "gross national farm product" is the "nettest" measure of the agricultural product discussed in this appendix.

The basic data used in the Department of Commerce series are almost entirely BAE estimates arranged according to Department of Commerce concepts. Computation involves, first, finding the sum of the current-price values of (1) cash receipts from marketings and CCC loans, (2) products consumed in farm households on farms where produced (home-used products), (3) net change in all farm inventories of crops and livestock, and (4) gross rental value of farm homes. From this total is deducted the values of intermediate products purchased and gross rents paid nonfarm landlords. The remainder is the gross national farm product in current prices. It is gross of capital consumption, as are all production measures discussed here, but net of all intermediate products regardless of origin. Gross national farm product is expressed in constant dollars by deflating in as fine detail as possible the current values of the components of farm output and intermediate products before they are added together using (in the revision) prices on a 1947-49 base. In this connection it is of interest to observe the extent to which the base period influences the rate of growth of gross national farm product (farm income net of intermediate products). The original estimates of the Department of Commerce, based on 1939 prices, show an increase between 1910 and 1950 of 30 per cent, whereas the revised series based on 1947-49 prices shows an increase of 45 per cent. This difference in rate of growth is primarily due to a different relationship of prices received and prices paid in the base years. The revised series is used in this study since the relationship of prices received and paid in the 1947-49 period appears more nearly representative of the forty-year span than the relationship of those prices in 1939. Moreover, we

<sup>8</sup> The original estimates by John W. Kendrick and Carl E. Jones ("Gross National Farm Product in Constant Dollars, 1910-50," *Survey of Current Business*, Dept. of Commerce, September 1951) have been revised and extended by L. Jay Atkinson and Carl E. Jones ("Farm Income and Gross National Product," *Survey of Current Business*, August 1954).

APPENDIX H

modified gross national farm product by adding gross rents paid to nonfarm landlords so that all value added by farm operation would be included, and we subtracted the gross rental value of farm homes to increase comparability of this net income series with our gross farm income series which also excludes this item. This should be remembered in analytical use of the series.

In Table H-1 we compare some of the available measures of agricultural production. These measures are shown as annual index

TABLE H-1  
Indexes of Agricultural Production  
(1910-14 = 100)

<i>Year</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>
1869	34								
1879	54								
1889	68								
1899	87				83				
1909	93	92			92	90			
1919	107	105	105	106	104	100	105	104	106
1929	120	121	109	119	120	115	113	114	120
1939		134	114	129	132	120	123	124	136
1949		164	136	163		147	137	136	168

*A* Strauss-Bean gross farm income deflated by Strauss-Bean "ideal" index of farm prices.

*B* Total of BAE estimates of cash receipts from marketings and CCC loans, value of home-used products, and value of net change in inventories, deflated by BAE index of prices received by farmers.

*C* BAE gross farm production.

*D* BAE farm output.

*E* Barger's and Landsberg's net output in agriculture.

*F* BLS agricultural production.

*G* Department of Commerce gross national farm product in constant dollars.

*H* Department of Commerce gross national farm product minus gross rental value of farm homes plus gross rent paid to nonfarm landlords in constant dollars.

*I* Department of Commerce estimates in constant dollars of cash receipts from marketings and CCC loans, value of home-used products, and value of net change in inventories.

Source: See this appendix.

numbers (1910-14 = 100) for the indicated precensus years. The income and value series have been adjusted or deflated to 1910-14 average prices.

For the period 1869 to 1909 index A (Strauss-Bean gross income deflated by Strauss-Bean "ideal" index of farm prices) is very similar to other measures of agricultural production (not shown in Table H-1) which can be obtained from the Strauss-Bean data.

In the 1909-49 period the percentage increases are very similar for

## APPENDIX H

three indexes—index B (total of BAE estimates of cash receipts from farm marketings, value of home-used products, and net change in inventories, all deflated by BAE index of prices received by farmers); index D (BAE index of farm output); and index I (Department of Commerce estimates of constant-price value of cash receipts from marketings, value of home-used products, and net change in inventories). Indexes B and I are nearly the same in concept, and components in current prices of index I are almost entirely BAE data. However, current-price data for index B were deflated in the aggregate by an overall index of prices received, while for index I the income components were deflated in detail and then totaled. Index D is a somewhat “netter” measure of farm production than index B or I and probably for that reason rises a little less rapidly.

Movement of index B agrees rather closely with index E (the Barger and Landsberg index of net output in agriculture), but indexes F, G, and H rise much more slowly than index B. Index F (the BLS index of agricultural production) differs from the others in that it uses labor requirements instead of prices as production weights. Index G (the Department of Commerce estimate of gross national farm product) is the “nettest” index shown, for it represents only value added in agricultural production; it excludes all intermediate products whether obtained from farm or nonfarm sources. Index H is similar to index G, but H differs in including gross rent paid to nonfarm landlords and in excluding the rental value of farm homes. Changes in index B correspond closely to changes in index A for years for which both are available.

Our particular interest in a measure of farm product was to obtain denominators for capital-product ratios which might shed some light on future requirements of capital in agriculture. More specifically, we sought a measure of physical output expressed in constant dollars so that it could be readily related to our constant-price estimates of farm capital, which reflect physical or “real” growth.

Since one of our main purposes is to relate capital to the need for product, there is considerable merit in the use of a measure of output in the form demanded by consumers. Gross farm income, which reflects the quantity of products sold by farmers (excluding insofar as possible sales to other farmers for use in production), the quantities consumed in farm homes, together with quantities representing inventory changes, is thus a useful one.

The weakness of gross farm income as a measure of product is that it does not necessarily reflect accurately the productivity of farm operations *per se*, since its volume may be influenced by changes in



## APPENDIX H

the amount of intermediate products, provided by other sectors, that are used in farming. Ideally we should be able to relate capital to a measure of "value added" by farm operations, and in turn relate "value added" to the gross output. However, since no such net data were available for the period 1869 to 1909, and since no satisfactory method of regional distribution of net data available for the United States from 1910 could be found, it was decided to use measures of gross production for most analyses, and to use measures of net production, where possible, in a supplementary way. On the whole, the basic data for index B (the constant-price values of BAE's estimates of cash receipts from marketings, value of home consumption, and net changes in inventories) seemed appropriate for the desired measure of agricultural production.

The Strauss-Bean data (index A) are the only estimates of agricultural income and production that cover the first four decades of this study. Fortunately, they conform quite well to the measure of production provided by index B. Hence, after adjusting the gross income data for price changes, we used them to measure physical production for the period 1869-1919. For the period 1909-49 (an intentional overlap), we use index B. For our purpose, it would seem that government payments to farmers should be excluded from the agricultural product. Such payments are a part of agricultural income, but they do not usually reflect or vary with current production. Similarly, we exclude the rental value of farm dwellings. From one standpoint, use of the farm dwelling is a part of farm income and of the farm product; moreover, we have included the value of the farm dwelling in our estimates of capital. From another view, however, the farm dwelling is in the nature of an overhead cost which must be met by a farmer if he is to operate his farm. For this reason and because of the difficulties involved in estimating it before 1910, the rental value of farm dwellings was excluded from gross income. We included the market value of farm products consumed in farm homes because of the widespread convention that regards food, fuel, etc., as consumer goods—not as intermediate products entering into production, as in the case of feed supplied to work animals. Conceptually, these estimates conform well with those of Strauss-Bean. In addition, they were attractive because beginning with 1924 they are available by states and therefore could be readily adapted to use in estimating production by the type-of-farming regions used in this study.

We recognize that deflation of an aggregative current-price income series results in only an approximate measure of physical production, and this procedure would not have been used if our primary problem

## APPENDIX H

had been to construct a precise measure of agricultural production. It seems likely, however, that some of the bias in the deflated income series may have been removed by the changing weights in the price indexes used as deflators. The Strauss-Bean price indexes are on a 1910-14 base, but their "ideal" index, which uses Fisher's formula, involves use of both base-period and current-year quantities as weights. In BAE's index of prices received by farmers, sales and income data for 1924-29 are used as weights for the years 1910 through 1934, and 1937-41 sales and income data are used as weights for 1935 and later years.

In most tables we show both the Strauss-Bean and BAE data for 1909 and 1919 and do not attempt to splice the two series. For 1909 the deflated BAE gross farm income figure was 6 per cent higher than the average deflated Strauss-Bean gross farm income estimate, and for 1919 the BAE figure was 7 per cent higher (Table H-3). As a result of these differences in level, some caution is necessary when comparing the physical volume of production for the period 1869 to 1909 with that for later years.

Distribution to the states and regions of the estimates of gross farm income for the United States was accomplished in various ways. Beginning with 1924 we used BAE state estimates of the current-price value of the components of gross farm income used in this study. For 1919, as neither the census nor BAE provided comparable data, the regional distribution of gross farm income in constant dollars for 1924 was applied to the price-adjusted United States total of gross farm income for 1919. The resulting regional amounts in constant dollars were then raised to current-dollar levels by multiplying by the regional price deflators, and adjusted slightly so that their sum equaled BAE's estimate in current prices for the United States. Applying regional percentages of constant-dollar totals, rather than of current-dollar totals, to the United States totals for 1919 had the advantage of minimizing distortion incidental to the unusual divergence of regional farm prices between 1919 and 1924. For the pre-census years 1869 to 1909 the United States current-dollar totals were distributed to the states and regions on the basis of census-reported state values of farm products not fed to livestock. Most of these totals for the United States that were built up by census from state enumerations were close to the estimates of Strauss and Bean—a fact that strongly recommended their use as a basis for distributing the latter.

Adjustment of gross farm income for price changes was accomplished in two ways. For 1869 through 1909 we distributed the

countrywide constant-dollar totals to states and regions on the basis of current-price values reported by the census for products not fed to livestock; this is equivalent, in effect, to deflating each of the current-price state and regional totals by the countrywide price index. For 1919 and later years we developed regional deflators by combining index numbers of prices received by farmers for forty-one states,<sup>9</sup> using current gross farm income of the states as weights. The forty-one state indexes were obtained from the files of the Agricultural Marketing Service of the Department of Agriculture, which itself had compiled twenty-five of them; the remainder were compiled by state agricultural colleges in cooperation with the AMS. Where the state indexes were on bases other than 1910-14, as in Kentucky, Minnesota, and Montana, conversions to that base were first made.

Footnote 9 indicates that index numbers are not available for every one of the forty-one states for each year for which we developed regional indexes. However, in view of the generally excellent regional coverage provided by the forty-one state indexes, we attempted in only three instances to supply the missing influence to the regional price deflator.

The lapse of the indexes of Maine, Massachusetts, and Vermont in the late 1940's led us to estimate the influence of these New England states upon the final result for 1949 for the Northeast region. We did this by observing the influence of these states on the regional index for the latest three years for which their indexes were available (1945-47) and assuming that this influence continued in 1949. Similarly, the lapse of Washington's index in 1943 led us to observe the relation of this index to that of Oregon's for the latest three years for which both were available, and to assume that prices received by farmers in these two states that furnished the index for the Pacific region continued in this relation in 1944 and in 1949. Elsewhere the occasional lapses in state indexes did not seem of sufficient importance to justify an attempt to improve the regional index that we had derived from the state indexes which were at hand.

<sup>9</sup> For the Northeast, Maine (except 1949), Massachusetts (except 1949), Vermont (except 1949), New York, New Jersey, Pennsylvania; for the Appalachian region, Delaware, Maryland, North Carolina, Kentucky, Tennessee (beginning 1939), Virginia, West Virginia; for the Southeast, Alabama, Florida, Georgia, South Carolina; for the Lake States, Michigan, Minnesota, Wisconsin; for the Corn Belt, Illinois, Indiana, Iowa, Missouri (beginning 1939), Ohio; for the Delta States, Arkansas, Louisiana; for the Great Plains, Kansas, Nebraska, North Dakota, South Dakota; Texas-Oklahoma region, Texas, Oklahoma; for the Mountain region, Idaho, Montana, Nevada (except 1949), Wyoming; and for the Pacific region, Oregon, Washington (except 1944 and 1949).

## APPENDIX H

Our regional deflators were applied to the regional estimates of gross farm income in current prices. As was explained above, the procedure for 1919 followed a somewhat different pattern.

Adjustment of gross income for price changes before distribution to regions, as was done for 1869-1909, means in effect that the same price deflator was used for all regions. Since (1) the composition of the agricultural product varies among regions, and prices of individual commodities seldom move in unison and (2) price trends for the same commodity may be different in different regions, the use of a country-wide price deflator will almost certainly produce results less accurate than if regional deflators were used or current-price gross farm incomes in the various regions were deflated by product components. Alternatively, we can say that our method before 1919 means that the regional distribution of constant-price gross farm income will be the same as the regional distribution of the current-price value of gross farm income or of farm production. Since this regional distribution is affected by current prices as well as by the physical quantity and composition of agricultural production in the regions, regional trends in constant-price gross farm income will be affected by current prices of farm products. If the prices of the principal products of a region in any year should rise relative to the United States index of prices received, use of the latter as a deflator would result in an overestimation of product for that region. The reverse would be true, of course, for a relative decline in prices of the region's farm products. In effect, use of a United States price index as a deflator for a given region means that the prices implicitly used as weights in the constant-price value aggregate in that region, instead of remaining constant as required, change from year to year to the extent that the regional price movement diverges from that for the United States.

Since our method of deflating regional gross farm income for 1909 and earlier leaves so much to be desired, it is unfortunate that we have no ready standard with which to compare our results, so that we might have some indication of the amount of error contained in our estimates. For the year 1919 and after we have BAE's index of farm output, which serves well as a standard for those years.

In Table H-2 we compare this index of farm output for selected years with indexes based on method 1 (deflation of gross farm income by a countrywide index before regional distribution, the method we use through 1909) and method 2 (regional gross farm income adjusted by regional deflators, the method we use after 1909). This table shows that regional deflators in general yield results more nearly

TABLE H-2  
 Indexes of Gross Farm Income and of Farm Output in 1910-1914 Prices, by Regions, 1919, 1929, 1939, 1949, and 1949  
 (1939 = 100)

REGION	1919				1929				1939				1949			
	Gross Farm Income		Farm		Gross Farm Income		Farm		Gross Farm Income		Farm		Gross Farm Income		Farm	
	Method 1	Method 2	Output	Output	Method 1	Method 2	Output	Output	Method 1	Method 2	Output	Output	Method 1	Method 2	Output	Output
United States	79	79	82	92	91	91	92	92	100	100	100	100	123	123	123	126
New England	69	90	90	90	78	86	90	90	100	100	100	100	99	119	119	120
Middle Atlantic	74	89	92	88	81	88	88	88	100	100	100	100	101	119	119	115
East North Central	73	74	80	79	82	80	79	79	100	100	100	100	116	123	124	124
West North Central	88	86	88	108	103	105	108	108	100	100	100	100	131	128	134	134
South Atlantic	74	75	78	84	81	87	84	84	100	100	100	100	111	114	111	111
East South Central	83	77	88	100	104	97	100	100	100	100	100	100	120	114	119	119
West South Central	97	86	89	96	100	94	96	96	100	100	100	100	143	130	139	139
Mountain	72	73	62	99	87	87	99	99	100	100	100	100	134	129	139	139
Pacific	62	59	62	82	84	79	82	82	100	100	100	100	127	120	134	134

Method 1: United States gross farm income deflated by a countrywide price index and distributed to regions on the basis of current price regional income data.

Method 2: Regional gross farm incomes deflated by regional price indexes and adjusted so that the sum equaled United States gross farm income deflated by United States price index.

Source: See this appendix.

## APPENDIX H

in line with BAE's index of farm output than do countrywide deflators. The test indicates that we must expect our regional estimates of gross farm income in constant prices for 1869 to 1909 to contain somewhat larger margins of error than those of 1919 and later. The estimates for 1909 are probably the best of the earlier ones because of the proximity of the base period and because of the small spread in regional prices, which can be inferred from prices in 1910, the first year for which state indexes are available.

The differences in trend of farm production as shown by deflated gross farm income (method 2) and the index of output are probably largely caused by inexact deflation, but in part they are due to differences in concept.

Since our main concern is with trends in the relation of capital to product in the various regions, the use of United States price indexes as deflators for the early period seems permissible. The regional ratios of capital to product presented in this study should, however, be used chiefly to indicate trends in productivity. Small differences between regions in the ratios of capital to product are not significant and should not be relied upon when comparing regions in regard to efficiency in use of capital.

In Table H-3 of this appendix the current- and constant-price estimates of gross farm income used in this study are shown for the United States and geographic regions.

TABLE H-3  
Gross Farm Income in Current and 1910-1914 Prices, by Regions, Selected Years, 1869-1949  
(millions of dollars)

REGION	1869	1879	1889	1899	1909	1919	1924	1929	1934	1939	1944	1949
<i>Current Prices</i>												
United States:												
Strauss-Bean	2,678	2,395	3,044	3,557	6,037	15,765						
BAE					6,400	16,427	11,282	12,811	6,057	9,228	21,773	29,868
Northeast:												
Strauss-Bean	694	476	517	470	622	1,703	1,216	1,271	856	1,035	1,984	2,756
BAE					659	1,692						
Appalachian:												
Strauss-Bean	383	302	329	402	664	1,624	1,161	1,295	818	1,013	2,381	3,069
BAE					704	1,676						
Southeast:												
Strauss-Bean	217	187	265	242	501	1,167	830	860	555	603	1,470	1,834
BAE					531	1,133						
Lake States:												
Strauss-Bean	212	230	280	334	543	1,513	1,087	1,224	566	947	2,124	3,018
BAE					576	1,528						
Corn Belt:												
Strauss-Bean	819	764	843	992	1,570	3,137	2,245	2,789	1,058	2,186	4,671	6,804
BAE					1,664	3,581						
Delta States:												
Strauss-Bean	182	163	222	214	326	899	640	747	388	507	1,116	1,482
BAE					346	871						
Great Plains:												
Strauss-Bean	40	98	256	373	767	1,844	1,316	1,544	173	753	2,325	2,896
BAE					813	1,988						

(continued on next page)

TABLE H-3 (continued)

REGION	1869	1879	1889	1899	1909	1919	1924	1929	1934	1939	1944	1949
<i>Current Prices (continued)</i>												
Texas-Oklahoma:												
Strauss-Bean	54	72	137	256	489	1,923						
BAE					518	1,823	1,380	1,212	543	752	1,915	3,106
Mountain:												
Strauss-Bean	13	19	46	103	235	788						
BAE					250	903	568	745	331	557	1,299	1,975
Pacific:												
Strauss-Bean	64	84	149	171	320	1,167						
BAE					339	1,232	839	1,124	769	875	2,488	2,928
<i>Constant Prices (1910-1914 Average)</i>												
United States:												
Strauss-Bean	2,254	3,553	4,536	5,783	6,192	7,108						
BAE					6,598	7,535	7,869	8,676	6,760	9,578	11,276	11,750
Northeast:												
Strauss-Bean	584	708	771	764	639	780						
BAE					681	826	863	822	853	943	974	1,120
Appalachian:												
Strauss-Bean	323	447	493	653	682	672						
BAE					726	712	744	860	799	959	1,104	1,148
Southeast:												
Strauss-Bean	183	277	393	390	513	402						
BAE					547	426	445	612	581	690	756	755
Lake States:												
Strauss-Bean	178	342	417	546	556	746						
BAE					593	791	826	802	670	970	1,070	1,201

(continued on next page)



TABLE H-3 (continued)

REGION	1869	1879	1889	1899	1909	1919	1924	1929	1934	1939	1944	1949
<i>Constant Prices (1910-1914 Average) (continued)</i>												
Corn Belt:												
Strauss-Bean	690	1,136	1,257	1,615	1,608	1,552						
BAE					1,713	1,645	1,718	1,864	1,283	2,241	2,478	2,710
Delta States:												
Strauss-Bean	153	242	333	345	332	306						
BAE					354	325	339	527	410	594	598	598
Great Plains:												
Strauss-Bean	34	144	378	607	789	955						
BAE					841	1,012	1,057	1,068	209	780	1,247	1,105
Texas-Oklahoma:												
Strauss-Bean	45	105	207	417	504	735						
BAE					537	780	814	805	594	804	1,000	1,145
Mountain:												
Strauss-Bean	10	28	66	168	241	389						
BAE					257	413	431	511	406	584	700	754
Pacific:												
Strauss-Bean	54	124	221	278	328	571						
BAE					349	605	632	805	955	1,013	1,349	1,214

Source: See footnote 8 of this appendix. Some revisions have been made in current price BAE farm income data. For latest data covering years 1910-53 see *The Farm Income Situation*, 1955 Outlook Issue, Dept. of Agriculture, Agricultural Marketing Service, October 1954, Tables 11 and 14.

## APPENDIX I

### Farm-Mortgage Recordings

TABLES I-1 to I-10 show the amount of farm-mortgage recordings by selected lender groups for the regions used in this study.

The statistics on farm-mortgage recordings for the years 1910 to 1934 were prepared by the Bureau of Agricultural Economics, those for 1936 and later years by the Farm Credit Administration, and those for 1934 and 1935 jointly by the two agencies. The following summary description of procedures used and sources of data is from a recent Farm Credit Administration publication on farm-mortgage recordings:

The data included in this report are derived from several sources. Data on amounts of "loans made" by the Federal land banks, Federal Farm Mortgage Corporation, joint stock land banks, and the Farmers Home Administration and its predecessors, are the amounts of regular loans closed as shown in the official records and reports of these agencies, except for those made by the joint stock land banks during the years 1917-20 which are partially estimated by the Bureau of Agricultural Economics (now the Agricultural Research Service) of the U.S. Department of Agriculture. Data on amounts of "mortgages recorded" by other lender groups are estimates of mortgages recorded, the estimates being developed from the information obtained from county registry offices in the sample counties. Information obtained from county registry offices comprises all recorded legal instruments making farm real estate the security for the repayment of a loan and includes mortgages, deeds of trust, purchase money mortgages, real estate sales contracts, and other types of instruments evidencing liens against farm real estate to the extent that they were recorded. Real estate sales contracts, for instance, are not always recorded. Amounts of "mortgages recorded" by other lender groups during the period 1910-33 are estimates of the Bureau of Agricultural Economics, and those recorded during the 1936-53 period are estimates of the Farm Credit Administration. Figures for the years 1934-35 are estimates prepared jointly by both organizations.

Estimates of the Bureau of Agricultural Economics are based on data obtained in a project conducted during 1936 and 1937 under the joint sponsorship of the Bureau and the Work Projects Administration with the cooperation of State Agricultural experiment stations. Basic data were obtained from the official records of more than 600 counties or approximately 20 per cent of the counties in the United States. An individual record was made of each mortgage or similar lien recorded in these counties during the years 1910-35, except that fewer counties

## APPENDIX I

were included for the years before 1917 than for the period beginning with that year.

Since 1934, the Farm Credit Administration has been developing estimates of mortgages recorded by lenders other than the Federal land banks and the Federal Farm Mortgage Corporation on the basis of data collected monthly by secretary-treasurers of national farm loan associations, county recorders, abstractors, and others from the records of counties including from 30 to 50 per cent of the farms in the United States. Because these estimates overlapped those of the Bureau of Agricultural Economics for 1934 and 1935, joint estimates were made for those years based on data from both surveys. Both the Bureau of Agricultural Economics and the Farm Credit Administration used the same method in developing estimates, the data obtained for sample counties being expanded on the basis of the relationship that the value of farmland and buildings in the sample counties was to the total value of farmland and buildings in the State.

In connection with data collected by the Bureau of Agricultural Economics, a farm was defined as a tract of land comprising 3 acres or more, used principally for agricultural purposes, unplatted, and lying outside the limits of incorporated places. For data collected by the Farm Credit Administration, no acreage limitation was set, but reporters were asked to include mortgages on rural land which derive their value primarily from agricultural uses. These include farms, plantations, ranches, nurseries, orchards, truck gardens, etc., but exclude platted subdivisions, oil lands, quarries, mines, forest lands, and other rural lands which derive their value largely from nonagricultural uses.

Some differences in the series of data collected by the two organizations may result from differences in classifying, by type of lender, mortgages which have been assigned from one lender to another. Some mortgagees, for example, have acted as agents for other lenders, recording mortgages in their own name and later assigning them to organizations such as insurance companies or savings banks. In such instances the Bureau of Agricultural Economics considered the last assignee to be the actual lender. Reporters for the Farm Credit Administration were also instructed to classify mortgages in this manner if they had definite knowledge that the mortgage was to be assigned in the immediate future to another mortgagee. Since the data were reported on a current monthly basis, however, it was impossible to get all assignments. This factor would, of course, have no effect upon the total amount recorded but only upon the classification by type of lender.<sup>1</sup>

<sup>1</sup> *Farm Mortgage Loans Made and Farm Mortgages Recorded by Principal Lenders*, Farm Credit Administration, 1954, pp. 1 and 2.

## APPENDIX I

TABLE I-1

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Northeast

<i>Year</i>	<i>Individuals</i>	<i>Banks</i>	<i>Insurance Companies</i>	<i>Federal Land Banks and Federal Farm Mortgage Corporation</i>	<i>Miscel- laneous</i>
1910	82.1	12.7	0.2		5.0
1911	81.8	11.4	0.3		6.5
1912	79.5	14.2	1.2		5.1
1913	79.7	15.1	0.2		5.0
1914	77.2	15.7	0.5		6.6
1915	76.1	18.4	0.3		5.2
1916	72.9	21.1	0.2		5.8
1917	76.4	17.0	1.0	1.3	4.3
1918	79.1	9.8	0.5	6.8	3.8
1919	75.7	13.5	0.5	6.6	3.7
1920	79.4	14.3	0.8	2.0	3.5
1921	76.6	15.3	0.4	3.3	4.4
1922	65.4	19.0	0.2	8.1	7.3
1923	57.9	19.8	0.2	9.3	12.8
1924	58.7	21.5	0.4	8.3	11.1
1925	56.4	22.1	0.4	7.7	13.4
1926	55.6	24.8	0.4	6.1	13.1
1927	54.6	22.3	0.2	8.6	14.3
1928	51.2	27.6	0.4	6.2	14.6
1929	53.8	27.8	0.2	5.0	13.2
1930	53.5	29.2	1.6	3.6	12.1
1931	55.4	29.2	1.2	4.5	9.7
1932	57.3	26.3	0.3	5.4	10.7
1933	51.4	18.0	0.2	20.2	10.2
1934	25.6	10.7	a	55.4	8.3
1935	41.7	20.8	a	28.3	9.2
1936	46.8	26.0	0.6	20.3	6.3
1937	49.4	27.4	0.4	16.9	5.9
1938	46.4	31.3	0.7	12.8	8.8
1939	45.7	32.9	1.2	11.6	8.6
1940	43.9	37.2	0.5	11.9	6.5
1941	46.3	35.6	0.6	10.8	6.7
1942	52.7	28.9	0.5	11.4	6.5
1943	54.8	28.9	0.2	11.8	4.3
1944	53.4	30.5	0.3	12.5	3.3
1945	47.9	37.7	0.2	10.9	3.3
1946	35.1	48.1	1.6	8.2	7.0
1947	33.9	49.0	2.9	8.6	5.6
1948	36.6	47.0	3.5	8.4	4.5
1949	35.3	46.0	5.2	8.6	4.9

<sup>a</sup> Less than 0.05 per cent.

Source: Farm Credit Administration.

## APPENDIX I

TABLE I-2

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Appalachian

<i>Year</i>	<i>Individuals</i>	<i>Banks</i>	<i>Insurance Companies</i>	<i>Federal Land Banks and Federal Farm Mortgage Corporation</i>	<i>Miscel- laneous</i>
1910	69.6	18.1	6.5		5.8
1911	69.8	17.4	4.1		8.7
1912	65.4	17.2	7.8		9.6
1913	69.8	15.7	7.5		7.0
1914	66.9	20.5	5.4		7.2
1915	63.8	18.4	9.2		8.6
1916	66.4	19.3	8.3		6.0
1917	60.0	21.0	9.4	2.9	6.7
1918	66.0	17.2	4.3	6.9	5.6
1919	68.8	16.4	2.5	4.8	7.5
1920	71.2	15.8	5.1	2.4	5.5
1921	59.1	20.7	7.0	5.8	7.4
1922	45.5	21.0	6.7	14.0	12.8
1923	43.2	19.5	12.2	8.5	16.6
1924	47.2	21.6	10.2	8.9	12.1
1925	45.2	21.1	8.3	7.7	17.7
1926	44.3	20.1	10.2	6.3	19.1
1927	47.0	23.9	7.0	6.0	16.1
1928	47.1	27.0	6.7	5.2	14.0
1929	49.7	25.6	7.1	3.8	13.8
1930	47.9	28.3	7.4	2.3	14.1
1931	49.0	29.0	6.7	3.5	11.8
1932	50.8	30.7	4.4	1.7	12.4
1933	41.5	20.1	3.7	22.7	12.0
1934	19.2	11.3	2.2	61.9	5.4
1935	38.7	23.8	5.7	23.0	8.8
1936	39.8	32.4	8.0	13.2	6.6
1937	42.0	33.4	10.9	8.4	5.3
1938	36.4	34.9	14.6	6.7	7.4
1939	34.0	38.1	11.7	6.9	9.3
1940	31.5	35.8	12.0	9.2	11.5
1941	31.8	36.8	11.5	6.9	13.0
1942	34.9	34.4	10.6	6.9	13.2
1943	41.1	36.9	8.7	5.6	7.7
1944	41.5	36.9	8.5	6.7	6.4
1945	39.6	43.1	6.5	6.3	4.5
1946	34.5	51.5	4.4	5.4	4.2
1947	33.2	48.7	6.3	5.9	5.9
1948	35.7	43.7	8.3	6.1	6.2
1949	36.0	39.8	9.2	7.7	7.3

Source: Farm Credit Administration.

APPENDIX I

TABLE I-3

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Southeast

<i>Year</i>	<i>Individuals</i>	<i>Banks</i>	<i>Insurance Companies</i>	<i>Federal Land Banks and Federal Farm Mortgage Corporation</i>	<i>Miscel- laneous</i>
1910	63.0	26.7	0.6		9.7
1911	63.9	24.2	3.7		8.2
1912	62.0	24.6	3.4		10.0
1913	64.9	26.3	0.6		8.2
1914	64.1	26.7	3.4		5.8
1915	59.9	28.5	4.1		7.5
1916	50.8	34.3	9.9		5.0
1917	52.9	24.9	12.0	1.8	8.4
1918	53.8	20.1	9.8	7.4	8.9
1919	57.0	21.9	7.2	6.2	7.7
1920	56.1	24.4	6.2	3.2	10.1
1921	44.7	31.5	5.9	7.8	10.1
1922	36.5	27.7	6.6	17.4	11.8
1923	39.7	27.8	6.0	11.8	14.7
1924	42.7	25.4	3.7	12.5	15.7
1925	58.5	14.4	2.3	6.3	18.5
1926	53.2	18.7	2.1	6.4	19.6
1927	44.9	25.7	2.6	10.2	16.6
1928	47.0	24.9	4.7	5.1	18.3
1929	44.9	25.6	5.3	3.8	20.4
1930	48.4	28.5	2.8	3.4	16.9
1931	47.4	33.3	1.6	1.9	15.8
1932	50.7	29.0	3.0	0.2	17.1
1933	30.8	14.1	2.8	40.9	11.4
1934	15.7	5.3	2.1	69.6	7.3
1935	38.4	18.2	7.4	23.5	12.5
1936	45.3	22.7	8.7	13.2	10.1
1937	47.4	27.6	4.5	10.1	10.4
1938	40.2	26.3	3.7	12.3	17.5
1939	36.8	27.9	4.7	11.7	18.9
1940	31.3	22.3	4.3	14.3	27.8
1941	31.0	21.7	4.4	11.5	31.4
1942	36.6	20.3	4.2	11.2	27.7
1943	45.6	21.5	4.5	10.6	17.8
1944	46.7	20.6	3.1	14.1	15.5
1945	48.7	24.2	2.5	11.8	12.8
1946	43.3	30.7	2.2	11.1	12.7
1947	38.8	29.2	5.5	13.4	13.1
1948	40.6	27.2	5.5	12.0	14.7
1949	36.5	28.4	5.6	14.0	15.5

Source: Farm Credit Administration.

## APPENDIX I

TABLE I-4

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Lake States

Year	Individuals	Banks	Insurance Companies	Federal Land Banks and Federal		Miscel- laneous
				Farm Mortgage Corporation		
1910	69.6	21.3	3.5			5.6
1911	71.0	20.7	4.8			3.5
1912	68.5	22.5	4.2			4.8
1913	72.4	20.0	3.4			4.2
1914	68.6	23.6	3.5			4.3
1915	63.5	25.9	4.8			5.8
1916	62.3	26.3	6.7			4.7
1917	62.0	21.7	8.9	1.6		5.8
1918	68.0	17.5	5.7	4.7		4.1
1919	63.9	22.1	3.5	4.0		6.5
1920	68.0	20.3	6.9	1.3		3.5
1921	59.1	22.9	10.8	2.4		4.8
1922	45.5	22.3	12.1	7.8		12.3
1923	37.3	22.0	16.8	9.1		14.8
1924	39.3	20.3	14.2	6.2		20.0
1925	44.6	23.2	15.7	4.0		12.5
1926	45.4	18.9	17.8	7.4		10.5
1927	51.4	18.0	15.5	6.6		8.5
1928	55.0	18.9	13.0	4.6		8.5
1929	58.2	18.8	12.5	3.4		7.1
1930	59.8	20.7	8.9	2.5		8.1
1931	63.0	18.6	8.3	2.4		7.7
1932	65.6	20.4	5.4	2.9		5.7
1933	38.8	13.3	3.0	39.7		5.2
1934	11.0	3.7	.9	83.0		1.4
1935	23.1	10.1	3.8	60.8		2.2
1936	36.7	17.5	12.5	29.9		3.4
1937	45.1	24.3	16.1	11.5		3.0
1938	41.5	26.4	21.8	5.9		4.4
1939	37.5	30.1	21.8	6.0		4.6
1940	37.4	30.5	20.2	7.1		4.8
1941	40.2	28.8	16.6	7.6		6.8
1942	42.8	27.0	16.9	6.4		6.9
1943	46.1	27.4	15.8	5.0		5.7
1944	45.8	30.2	12.7	7.5		3.8
1945	43.7	33.7	11.3	7.8		3.5
1946	39.9	40.4	8.5	7.0		4.2
1947	37.3	39.7	10.4	8.6		4.0
1948	38.8	37.2	11.4	9.7		2.9
1949	35.4	34.2	14.4	13.2		2.8

Source: Farm Credit Administration.

## APPENDIX I

TABLE I-5

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Corn Belt

<i>Year</i>	<i>Individuals</i>	<i>Banks</i>	<i>Insurance Companies</i>	<i>Federal Land Banks and Federal Farm Mortgage Corporation</i>	<i>Miscel- laneous</i>
1910	60.4	15.2	15.5		8.9
1911	55.7	17.8	16.6		9.9
1912	54.1	16.5	20.8		8.6
1913	60.9	16.5	13.3		9.3
1914	58.6	15.2	15.8		10.4
1915	52.4	19.1	20.1		8.4
1916	45.7	22.5	20.3		11.5
1917	45.1	21.9	22.3	0.4	10.3
1918	55.9	17.0	13.8	3.1	10.2
1919	51.0	20.2	10.7	3.7	14.4
1920	56.3	17.3	16.0	1.2	9.2
1921	44.7	22.7	19.6	2.1	10.9
1922	31.6	21.5	23.1	4.7	19.1
1923	26.8	19.3	31.9	3.8	18.2
1924	28.6	22.4	29.4	5.1	14.5
1925	28.6	21.3	29.3	3.7	17.1
1926	27.9	20.2	28.7	5.8	17.4
1927	31.3	21.8	24.0	8.0	14.9
1928	32.4	23.0	23.6	8.0	13.0
1929	33.2	23.4	25.1	5.5	12.8
1930	38.0	23.9	24.8	3.2	10.1
1931	38.9	25.4	20.8	3.3	11.6
1932	44.3	27.7	13.8	2.6	11.6
1933	33.0	18.0	11.3	29.5	8.2
1934	12.2	6.7	4.4	72.0	4.7
1935	21.2	16.0	11.4	45.4	6.0
1936	23.9	22.1	23.0	23.9	7.1
1937	25.2	26.2	28.7	13.4	6.5
1938	23.1	26.9	32.7	10.8	6.5
1939	22.6	28.2	31.7	10.7	6.8
1940	19.9	27.2	33.8	11.8	7.3
1941	19.9	25.2	33.6	11.6	9.7
1942	21.5	25.2	36.4	9.3	7.6
1943	23.9	26.9	33.6	9.4	6.2
1944	26.2	29.2	30.6	8.6	5.4
1945	26.2	33.7	24.8	9.8	5.5
1946	25.0	38.1	23.1	8.3	5.5
1947	24.0	36.1	25.5	9.1	5.3
1948	24.6	32.0	29.1	9.8	4.5
1949	23.1	28.6	31.1	12.4	4.8

Source: Farm Credit Administration.



## APPENDIX I

TABLE I-6

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Delta States

<i>Year</i>	<i>Individuals</i>	<i>Banks</i>	<i>Insurance Companies</i>	<i>Federal Land Banks and Federal Farm Mortgage Corporation</i>	<i>Miscel- laneous</i>
1910	61.8	15.6	0.9		21.7
1911	61.1	17.6	1.1		20.2
1912	63.2	14.8	2.7		19.3
1913	65.1	14.5	0.2		20.2
1914	65.3	13.9	1.2		19.6
1915	54.3	22.5	4.0		19.2
1916	53.7	24.1	3.9		18.3
1917	56.1	17.4	3.8	2.0	20.7
1918	63.6	13.4	1.8	7.6	13.6
1919	69.8	15.1	2.6	4.4	8.1
1920	58.9	19.9	5.5	2.6	13.1
1921	40.4	35.7	6.6	4.2	13.1
1922	40.0	28.1	3.8	12.6	15.5
1923	38.3	29.3	4.3	13.4	14.7
1924	33.0	32.3	5.8	16.1	12.8
1925	37.4	32.9	5.6	10.2	13.9
1926	38.5	37.4	4.8	5.9	13.4
1927	34.7	37.0	4.5	7.7	16.1
1928	37.8	40.1	4.1	4.3	13.7
1929	34.4	40.6	4.7	2.7	17.6
1930	35.0	39.8	3.1	2.4	19.7
1931	35.3	35.5	4.2	1.4	23.6
1932	31.8	37.8	4.1	.3	26.0
1933	33.9	27.8	2.4	6.1	29.8
1934	21.4	14.2	3.4	43.6	17.4
1935	34.6	23.7	9.7	14.5	17.5
1936	41.0	26.8	8.1	13.1	11.0
1937	43.5	32.3	7.4	8.0	8.8
1938	42.5	33.4	3.5	11.1	9.5
1939	36.1	30.7	6.1	11.2	15.9
1940	32.7	29.4	9.1	14.5	14.3
1941	34.1	25.4	12.6	11.1	16.8
1942	35.6	23.4	9.7	9.0	22.3
1943	40.2	26.6	11.1	11.3	10.8
1944	38.6	22.0	16.2	11.3	11.9
1945	41.7	26.4	11.7	11.2	9.0
1946	31.7	32.2	15.1	12.4	8.6
1947	34.7	25.0	19.3	12.9	8.1
1948	38.0	25.2	16.8	11.4	8.6
1949	32.9	23.9	22.2	11.9	9.1

Source: Farm Credit Administration.

APPENDIX I

TABLE I-7

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Great Plains

<i>Year</i>	<i>Individuals</i>	<i>Banks</i>	<i>Insurance Companies</i>	<i>Federal Land Banks and Federal Farm Mortgage Corporation</i>	<i>Miscel- laneous</i>
1910	64.7	9.9	13.3		12.1
1911	58.4	14.8	17.5		9.3
1912	52.0	17.4	18.6		12.0
1913	55.9	16.9	14.4		12.8
1914	51.1	21.4	15.2		12.3
1915	51.9	17.2	18.8		12.1
1916	47.6	24.1	17.7		10.6
1917	50.4	16.6	20.7	3.2	9.1
1918	57.4	13.0	13.5	7.1	9.0
1919	54.7	15.4	12.5	4.7	12.7
1920	56.6	15.0	16.6	2.0	9.8
1921	43.1	24.5	18.0	3.0	11.4
1922	32.0	21.7	21.4	8.2	16.7
1923	28.2	19.0	28.5	7.3	17.0
1924	32.7	18.7	27.8	8.4	12.4
1925	37.1	18.7	27.2	4.6	12.4
1926	34.2	16.2	33.2	5.6	10.8
1927	37.1	16.9	26.8	6.8	12.4
1928	43.8	16.7	24.0	5.1	10.4
1929	45.4	14.3	26.3	2.9	11.1
1930	49.4	16.5	21.3	3.2	9.6
1931	48.0	20.1	17.1	3.3	11.5
1932	51.3	19.5	14.4	5.5	9.3
1933	34.3	12.4	8.4	37.4	7.5
1934	8.7	2.6	4.2	82.3	2.2
1935	19.8	7.9	9.0	58.8	4.5
1936	27.6	15.9	16.0	33.9	6.0
1937	32.3	21.6	20.3	19.0	6.8
1938	31.2	19.6	25.6	13.5	10.1
1939	33.6	20.7	21.9	14.3	9.5
1940	31.8	21.8	21.5	14.7	10.2
1941	31.4	20.5	22.9	13.4	11.8
1942	28.8	18.8	29.1	11.4	11.9
1943	30.3	18.4	30.5	12.4	8.4
1944	32.0	17.9	29.3	14.9	5.9
1945	30.3	18.6	26.6	19.1	5.4
1946	29.7	21.5	26.5	14.9	7.4
1947	31.8	20.1	25.5	16.2	6.4
1948	32.8	20.4	25.0	16.6	5.2
1949	29.3	18.8	26.3	20.1	5.5

Source: Farm Credit Administration.

APPENDIX I

TABLE I-8

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Texas-Oklahoma

<i>Year</i>	<i>Individuals</i>	<i>Banks</i>	<i>Insurance Companies</i>	<i>Federal Land Banks and Federal Farm Mortgage Corporation</i>	<i>Miscel- laneous</i>
1910	55.8	18.0	7.0		19.2
1911	58.0	13.1	5.5		23.4
1912	61.4	14.2	7.4		17.0
1913	55.3	14.3	10.0		20.4
1914	53.9	16.1	6.9		23.1
1915	43.1	20.2	15.9		20.8
1916	43.6	21.0	16.4		19.0
1917	60.1	11.4	9.2	1.6	17.7
1918	52.6	13.6	7.2	6.1	20.5
1919	48.8	10.5	12.5	6.7	21.5
1920	51.9	11.6	13.1	2.3	21.1
1921	35.0	23.6	8.6	3.3	29.5
1922	36.4	17.2	15.0	8.3	23.1
1923	36.1	18.6	11.3	8.4	25.6
1924	42.0	16.4	12.6	7.7	21.3
1925	43.6	13.6	10.3	8.2	24.3
1926	41.8	15.2	12.0	8.6	22.4
1927	36.6	13.6	13.3	10.5	26.0
1928	43.1	13.8	14.4	7.8	20.9
1929	48.1	13.1	15.8	6.3	16.7
1930	41.7	21.3	13.0	6.5	17.5
1931	37.7	24.0	13.4	6.6	18.3
1932	34.4	26.6	16.0	4.8	18.2
1933	28.4	19.9	7.0	27.0	17.7
1934	14.6	6.8	4.8	62.9	10.9
1935	27.1	14.3	9.0	33.7	15.9
1936	26.8	16.3	20.1	25.2	11.6
1937	28.7	19.2	23.9	17.5	10.7
1938	28.6	18.8	25.2	13.8	13.6
1939	26.9	20.0	28.8	12.0	12.3
1940	27.7	15.3	22.4	19.3	15.3
1941	26.4	13.4	22.9	19.4	17.9
1942	29.8	17.1	21.0	19.5	12.6
1943	39.1	13.6	19.6	16.4	11.3
1944	42.1	15.3	18.0	15.2	9.4
1945	43.7	16.5	17.8	15.8	6.2
1946	34.2	18.1	25.9	15.3	8.5
1947	34.7	17.7	29.2	11.0	7.4
1948	33.4	16.8	32.3	12.0	5.5
1949	34.1	15.4	28.3	16.1	6.1

Source: Farm Credit Administration.

## APPENDIX I

TABLE I-9

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Mountain

<i>Year</i>	<i>Individuals</i>	<i>Banks</i>	<i>Insurance Companies</i>	<i>Federal Land Banks and Federal Farm Mortgage Corporation</i>	<i>Miscel- laneous</i>
1910	69.3	12.4	1.8		16.5
1911	66.0	15.0	3.8		15.2
1912	59.4	18.3	3.9		18.4
1913	56.6	17.8	4.5		21.1
1914	56.4	20.7	3.0		19.9
1915	55.1	22.0	2.9		20.0
1916	52.6	26.3	4.4		16.7
1917	59.4	17.5	3.1	4.0	16.0
1918	58.6	14.4	2.4	8.4	16.2
1919	58.0	19.3	1.7	6.3	14.7
1920	58.9	20.3	2.4	2.4	16.0
1921	45.1	28.7	3.5	4.6	18.1
1922	35.3	26.6	4.0	14.0	20.1
1923	38.0	22.5	4.2	14.1	21.2
1924	41.4	22.3	5.0	12.4	18.9
1925	45.0	21.6	5.7	8.0	19.7
1926	46.7	19.8	5.0	7.2	21.3
1927	48.9	19.7	5.6	8.4	17.4
1928	52.6	20.3	4.7	6.0	16.4
1929	55.4	18.9	4.2	5.9	15.6
1930	50.6	24.1	4.8	6.1	14.4
1931	50.3	24.7	4.2	5.4	15.4
1932	42.8	28.7	3.6	3.2	21.7
1933	29.5	22.7	2.7	15.6	29.5
1934	12.7	8.8	1.0	63.5	14.0
1935	23.0	15.9	4.5	39.2	17.4
1936	34.8	24.4	6.5	21.2	13.1
1937	37.3	29.3	6.8	13.8	12.8
1938	36.4	30.0	6.8	13.2	13.6
1939	32.7	33.9	5.5	13.0	14.9
1940	32.4	29.8	7.3	15.1	15.4
1941	37.6	23.2	8.1	17.5	13.6
1942	37.9	20.8	8.0	16.8	16.5
1943	47.5	19.8	9.0	12.4	11.3
1944	45.8	23.1	7.4	14.5	9.2
1945	45.2	23.4	8.3	15.7	7.4
1946	40.3	25.6	12.4	14.3	7.4
1947	37.5	25.4	17.8	12.1	7.2
1948	43.0	19.5	20.2	10.0	7.3
1949	38.0	18.1	23.1	13.4	7.4

Source: Farm Credit Administration.

## APPENDIX I

TABLE I-10

Farm-Mortgage Recordings: Percentage Distribution of Total Amount,  
by Selected Lender Groups, 1910-1949, Pacific

<i>Year</i>	<i>Individuals</i>	<i>Banks</i>	<i>Insurance Companies</i>	<i>Federal Land Banks and Federal Farm Mortgage Corporation</i>	<i>Miscel- laneous</i>
1910	51.2	29.7	1.5		17.6
1911	57.2	29.0	1.8		12.0
1912	50.5	30.1	1.7		17.7
1913	50.0	30.1	2.0		17.9
1914	56.1	28.8	1.8		13.3
1915	52.2	27.6	4.8		15.4
1916	48.0	38.2	4.1		9.7
1917	48.4	35.1	3.4	3.6	9.5
1918	50.6	27.4	3.5	9.7	8.8
1919	52.1	30.3	2.4	5.7	9.5
1920	52.4	34.5	2.2	1.9	9.0
1921	44.8	36.4	4.1	4.1	10.6
1922	35.6	36.5	4.6	9.4	13.9
1923	36.2	37.1	4.8	6.0	15.9
1924	36.8	39.7	4.3	5.2	14.0
1925	37.9	38.3	4.5	4.5	14.8
1926	41.9	33.8	5.0	4.7	14.6
1927	42.4	35.3	4.9	5.2	12.2
1928	44.1	37.7	3.4	3.6	11.2
1929	44.4	34.5	3.6	2.3	15.2
1930	44.7	38.2	3.9	2.1	11.1
1931	42.0	39.1	2.0	1.9	15.0
1932	40.7	42.9	1.5	2.3	12.6
1933	31.0	33.9	1.4	23.1	10.6
1934	15.3	14.2	1.3	64.3	4.9
1935	29.0	32.4	2.4	27.9	8.3
1936	33.6	36.6	5.2	16.4	8.2
1937	32.9	42.0	7.0	13.5	4.6
1938	30.1	44.9	5.3	14.1	5.6
1939	31.9	39.8	8.7	13.4	6.2
1940	31.1	37.4	6.8	18.0	6.7
1941	31.9	37.1	8.3	15.5	7.2
1942	39.1	29.8	8.4	11.8	10.9
1943	50.0	28.7	4.7	9.1	7.5
1944	54.4	25.4	3.5	10.3	6.4
1945	50.4	27.2	7.1	11.2	4.1
1946	49.6	31.9	5.8	8.6	4.1
1947	44.2	32.2	8.3	10.8	4.5
1948	43.5	26.2	12.0	11.5	6.8
1949	40.9	23.9	13.9	12.4	8.9

Source: Farm Credit Administration.

## INDEX

- Ackerman, Joseph, 161 n.  
 Allen, R. H., 41 n.  
 Animal products: rising importance of, 126  
 Assets, *see* Capital, physical farm, and Financial assets of farmers  
 Atkinson, L. Jay, 39, 41, 205 n.
- Barger, Harold, 204  
 Barton, Glen T., 28 n., 202 n.  
 Bean, Louis H., 39, 41, 201, 208  
 Black, J. D., 41 n.  
 Brannen, C. O., 161 n.  
 Bressler, Raymond G., Jr., 204 n.  
 Brodell, Albert P., 28 n.  
 Brough, C. H., 183 n.
- Building-product ratios: estimating constant-price values of, 43-44, 179-180, 181; influences on, 119-121 *passim*; regional aspects of, 122-124; trends of, 118-121 *passim*  
 Buildings: influences on investment in, 34, 119-122 *passim*; prospective expenditures for, 34-35; regional factors influencing investment in, 122, 124
- Capital, farm: amounts invested in major types during five-year periods, *see* Capital formation, estimates of net and gross; prospective growth of, 29-36 *passim*; *see also* Capital, physical farm, and *see under* Currency and demand deposits  
 Capital formation (farm): description of, 6; estimates of net and gross, 134-143 *passim*; estimating costs of, 134; examples of direct, 131; financing of, 19-20, 132, 134-143 *passim*, 151; growing awareness of benefits of, 37-38; income and, 149-151; influences on, 13-14, 32-33; net and gross measures of, 133-134; savings related to, *see under* Savings of farmers  
 Capital, physical farm: effect of growth on composition of, 14-18, 62, 70-73 *passim*; factors affecting amount per worker, 86, 89, 91, 94, 98; factors in regional differences in movements of, 53, 59, 64, 65; growth or decline of, 13-14, 53-59, 63-72; increase per worker, past, 86, prospective, 30-32; items included in, 3-6; land as, 4-5; and productivity of labor, 22-25, 94-98; prospective changes in composition of, 36; regional aspects of ratio to workers, 90-91, 94-98; unit farms and, *see* Scale of farming  
 Capital-product ratios: factors contributing to decline of, 21-22, 102, 104-105; influences of interregional shifts in agriculture on, 21, 106-107; persistence of regional differences in, 106, 107, 110-112; trends of, past, 21, 100-102, prospective, 29-30; *see also* Building-product ratios, Land-product ratios, Livestock-product ratios, Machinery-product ratios, Stored crop-product ratios, and *see under* Currency and demand deposits  
 Capital, real farm, *see* Capital, physical farm  
 Cash balances used in farming: influences on growth of, 78-79; prospective growth of, 36; *see also* Currency and demand deposits  
 Cleaver, Thayer, 121 n.  
 Cochrane, Willard W., 30 n.  
 Cooper, Martin R., 28 n., 202 n.  
 Cooperatives, farm: and farm operation, 74, 81; farmers' equities in, 81-82  
 Credit: *see* Farm mortgage loans, also Non-real-estate loans  
 Credit, merchant and dealer: estimating amounts outstanding to farmers, 160  
 Currency and demand deposits: growth of, 75; importance among total farm assets, 78-79; in ratio to product, 130
- Davis, I. G., 41 n.  
 Demand deposits, *see* Currency and demand deposits  
 Edwards, A. M., 194 n.
- Farm mortgage loans: prospective uses of, 38; reduction through foreclosure etc., 142-143 n.; regional differences in sources of, 171-172; sources of, 151-157  
 Farms: comparability of numbers of, 41-42; differences in rate of establishment before and after 1900, 13-14; number of, 47, 50-51  
 Ferrier, W. T., 161 n.  
 Financial assets of farmers: composition and classification of, 74; and farm operation, 77-79; *see also* Currency and demand deposits, Cash balances used in farming, Government bonds, Life insurance reserves, and *see under* Cooperatives, farm  
 Forster, Garnet W., 161 n.
- Goldsmith, Raymond W., 39, 147, 160 f.  
 Government bonds: capital used in farming excludes, 80; farmers' accumulation and liquidation of, 141, 147-148; as financial reserves, 74, 148; net farm income and holdings of, 80-81  
 Griffen, Austin R., 27 n.
- Hart, Albert Gailord, 160 n.  
 Hart, V. B., 161 n.

## INDEX

- Hawk, Emory I., 90 n.  
 Hopkins, John A., 204 n.  
 Horton, D. C., 142 n.
- Ibach, D. B., 121 n.  
 Improved land: area of, 49-51; definition of, 177 n.; value ratio of unimproved land to, 179, 183-185  
 Income, gross farm: adjustments for price changes, 209-213; constant-dollar estimates reflecting output, 215-216; estimating regional amounts of, 209; as measure of physical production, 99-100, 207-208  
 Income, net farm: and ability to finance new capital, 94; and miscellaneous financial reserves, 80-81, 141; and net savings, 145; new capital financed by, 142, 143  
 Investment, *see* Capital formation
- Jensen, Ward C., 161 n.  
 Johnson, Neil W., 30 n.  
 Johnson, Sherman E., 33 n.  
 Jones, Carl E., 39, 41, 104 n., 205 n.  
 Jones, Lawrence A., 159, 160 n.  
 Jones, S. A., 190 n.
- Kendrick, John W., 104 n., 205 n.  
 Koenig, Herman, 159 n.
- Labor force, farm: *see* Persons engaged in agriculture  
 Lampe, Harlan C., 30 n.  
 Land: as physical capital, 4, 5  
 Land in farms: area of, 47, 49, 50-51; estimating constant-price values of, 43-44, 177 n., 178-179; prospective additions to, 34; *see also* Improved land  
 Land-product ratios: influences on, 112, 114; regional aspects of, 114-116; trends of, 112  
 Landsberg, Hans H., 204  
 Larsen, H. C., 142 n.  
 Life insurance reserves: farmers' equity in, 75; as financial reserves, 80  
 Livestock: estimating constant-price values of, 40; prospective growth of inventory of, 35  
 Livestock-product ratios: influences on, 126; regional aspects of, 126-128; trends of, 124  
 Livestock products, *see* Animal products  
 Love, Harry M., 161 n.
- Machinery, farm: estimating constant-price values of, 40; factors influencing investment in, 119-122 *passim*; price index of, 1910-1914 base, 186, 1929 base, 200; prospective growth of, 35  
 Machinery-product ratios, influences on, 119-122 *passim*; regional aspects of, 124; trends of, 118-121 *passim*
- McKibben, Eugene G., 27 n.  
 Mead, Elwood, 183 n.  
 Mills, F. C., 186  
 Moore, Arthur N., 161 n.  
 Mortgage loans, *see* Farm mortgage loans
- Non-real-estate loans: extent used to finance capital, 157-160; federal provisions for improving supply of, 162-163, 166-167; prospective uses of, 38; regional differences in institutional sources of, 172-173; sources of, 161-167 *passim*  
 Norton, L. J., 161 n.
- Output, *see* Production, farm
- Pearson, Frank A., 186  
 Persons engaged in agriculture: and capital, *see under* Capital, physical farm; number of, 46; regional distribution of, 47, 48  
 Pierce, Walter H., 161 n.  
 Price bases, alternative, 43-44, 199  
 Price of farm products, changes in: effects on farm assets, 53, 59, 62, 64-65, 71, 72, 119; regional differences in the effects, 64-65  
 Production, farm: gross farm income as measure of, 99-100, 207-208; influence of intermediate products on, 20, 102-104; influence of technology on, 20, 104-105; measures of, 201-208; relation of physical capital, 20-22, 29-30, 37, 91-98 *passim*  
 Production indexes, *see under* Production, farm  
 Productivity of labor, *see under* Capital, physical farm
- Regions as type-of-farming areas, 7-11
- Savings of farmers: capital formation and, 148-149; farm income and, 144-148; gross and net, defined, 144; in miscellaneous reserves, 80, 148  
 Sayre, C. R., 161 n.  
 Scale of farming: average acreage and, 86; causes of recent increases in, 19; changes in, 84-86; population density and, 84; prospective trend in, 32, 37; regional differences in, 83-84  
 Seeley, Burton D., 161 n.  
 Shaw, Byron T., 33 n.  
 Smith, Tynan, 159 n.  
 Sources of capital funds, *see* Capital formation . . . , financing of  
 Sparlin, Estal E., 161 n.  
 Stored crops: estimating constant-price values of, 40, 43; estimating current values of, 192; estimating volume of, 192-193  
 Stored crops-product ratios: influences

## KEY TO TYPES OF ENTERPRISE

- I. Fruit, truck, and mixed farming
  - I-A(1-7). Fruit and mixed farming
  - I-B(1-7). Fruit, truck, and mixed farming
  - I-C(1-2). Truck and mixed farming
  - I-D(1). Truck
- II. Range livestock
  - II-A(1-6). Seasonal grazing, migratory
  - II-B(1-8). Seasonal grazing, nonmigratory
  - II-C(1-4). Upland summer grazing
  - II-D(1-4). Year-long grazing
- III. Wheat and small grains
  - III-A(1-4). Specialized wheat
  - III-B(1). Wheat and peas
  - III-C(1-5). Wheat and range livestock
  - III-D(1). Wheat, grain sorghums, and range livestock
  - III-E(1-4). Wheat and general farming
  - III-F(1). Small grains
- IV. Dairy
  - IV-A(1-6). Specialized dairy
  - IV-B(1-2). Dairy and livestock
  - IV-C(1). Dairy, hay, and potatoes
  - IV-D(1-2). Dairy and cash crops
  - IV-E(1-4). Dairy, poultry, and mixed farming
  - IV-F(1-6). Dairy and general farming
- V. Feed grains and livestock (Corn Belt)
  - V-A(1-2). Cattle feeding and hogs
  - V-B(1-2). Cash corn, oats, and soybeans
  - V-C(1-2). Hogs and soft winter wheat
  - V-D(1). Livestock, dairy, soybeans, and cash grain
  - V-E(1). Hogs and dairy
  - V-F(1-5). Livestock and cash grain
  - V-G(1). Livestock, cash grain, and dairy
  - V-H(1-2). Livestock and pasture
- VI. General farming
  - VI-A(1). Dairy and livestock feeding, irrigated
  - VI-B(1). Dairy, hay, and sugar beets, irrigated
  - VI-C(1). Dairy and range livestock, small-scale
  - VI-D(1-7). Livestock and special crops, irrigated
  - VI-E(1-3). Livestock and cash grain
  - VI-F(1). Livestock, truck, and cotton, small-scale
  - VI-G(1-3). Dairy, livestock, and poultry
  - VI-H(1-4). Livestock and tobacco
  - VI-J(1-2). Livestock and dairy
  - VI-K(1). Livestock, fruit, and tobacco, small-scale
  - VI-L(1). Truck, tobacco, and livestock
  - VI-M(1-2). Forest products, truck, and cotton, small-scale
- VII. Cotton
  - VII-A(1-8). Specialized cotton
  - VII-B(1). Cotton and tobacco
  - VII-C(1). Cotton, tobacco, hogs, and peanuts
  - VII-D(1-2). Cotton and livestock
  - VII-E(1). Cotton and range livestock
  - VII-F(1). Cotton and sugarcane
  - VII-G(1-2). Cotton and wheat
  - VII-H(1-5). Cotton and general farming
  - VII-J(1). Cotton and forest products
  - VII-K(1-3). Irrigated cotton and alfalfa
- VIII. Tobacco and general farming
  - VIII-A(1-2). Flue-cured
  - VIII-B(1). Burley
  - VIII-C(1). Dark
  - VIII-D(1). Southern Maryland
- IX. Special crops and general farming
  - IX-A(1-2). Rice
  - IX-B(1). Sugarcane
  - IX-C(1-2). Potatoes
  - IX-D(1-3). Peanuts
  - IX-E(1-2). Potatoes, dry beans, sugar beets, and livestock, irrigated
  - IX-F(1-3). Sugar beets, dry beans, and livestock, irrigated
  - IX-G(1). Dry beans, nonirrigated
- X. Nonfarming
  - X-A(1-3). Deserts
  - X-B(1-12). Mountains and forests
  - X-C(1-2). Lowlands and everglades



## INDEX

- on, 129-130; regional aspects of, 128-129; trends of, 128, 129-130
- Strauss, Frederick, 39, 41, 201, 208
- Technological improvements: and accelerated decline after 1920 in capital-product ratio, 104-105; capital savings produced by, 106, 114, 121-122, 126; and composition of farm capital, 18, 36; difficulties of foreseeing rate of change in, 26-28; and output, 20, 23; prospective effects on ratio of output to capital of, 29; and prospective expansion of land in farms, 34; and prospective expansion of livestock, 35; and prospective size of farms, 37
- Tostlebe, Alvin S., 177 n.
- Trelogan, Harry C., 29 n.
- Type of farming: chief determinants of, 11; *see also* Regions
- United States govt. bonds, *see* Government bonds
- Uses of capital funds, *see* Capital formation . . . , estimates of net and gross
- Van Arsdall, R. N., 121 n.
- Wall, Norman J., 142 n., 160 n., 163 n.
- Warren, George F., 186
- Wickens, David L., 161 n.
- Wooton, H. H., 33 n.