

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: American Agriculture, 1899-1939: A Study of Output, Employment and Productivity

Volume Author/Editor: Harold Barger and Hans H. Landsberg

Volume Publisher: NBER

Volume ISBN: 0-87014-041-8

Volume URL: <http://www.nber.org/books/barg42-1>

Publication Date: 1942

Chapter Title: Employment in Agriculture

Chapter Author: Harold Barger, Hans H. Landsberg

Chapter URL: <http://www.nber.org/chapters/c4601>

Chapter pages in book: (p. 228 - 246)

Chapter 6

Employment in Agriculture

THE abundance and variety of data relating to agricultural production stand in striking contrast to the sparseness and unreliability of the material available for estimates of agricultural employment. Both because of the quantitative importance of the subject, and because of the inconsistency of existing estimates, the difficulties encountered in the measurement of employment in agriculture call for more extended discussion than is necessary when one seeks to appraise the labor force of most other segments of the national economy.

These difficulties originate in the nature of agricultural enterprise itself, and in the character of the employment to which it gives rise. In most other fields of endeavor labor input consists largely of working time remunerated by the hour, day or week. The payroll bears a close, if not always a constant, relationship to the amount of labor consumed. It is true in a general way, for such industries, to say that the compilation of payrolls involves a simultaneous compilation of numbers employed—if not indeed of days or hours worked. Statistics of labor input are therefore in a certain sense a by-product of the execution of the wage contract. In many industries, to be sure, before a complete picture can be obtained separate account must be taken of the labor of individual entrepreneurs, who in a sense employ themselves, but this qualification is seldom of great quantitative importance. Except in the professions, which, like agriculture, are peculiar in this respect, the wage contract itself remains by far the most important source of employment data.

In the case of agriculture the situation is quite different. In the first place, farmers do not normally keep payroll records of a kind that can be made to yield, through Census or other inquiry, adequate statistics of their labor purchases. But even if they did, such statistics would not go very far toward a solution of the problem. According to the Census of 1930, out of 10.5 million persons engaged in agriculture only 2.7 million, or about a quarter of the total, worked for wages. The remaining three quarters of the labor force consisted of farmers themselves (including croppers) and of unpaid family laborers. It is apparent, then, that one cannot compile reliable estimates of total labor input on an hourly, daily, or even weekly, basis. In the case of agriculture the best we can do is to attempt to measure the aggregate working population at different dates, and to treat this total as a measure of labor input. But even this is not easy to do, for the number of farm laborers, whether family or hired workers, was not reported by any Census of Agriculture prior to 1935. We are therefore forced to depend in the main upon the Census of Population, and to regard the labor force as equivalent to the number of persons reported as gainfully occupied in agriculture. This treatment is admittedly far from satisfactory: it leads to the inclusion of those who are unemployed, yet regard themselves as attached to agriculture; and it makes no distinction between a farmer who works 365 days a year and a laborer who may work only during a few weeks of peak activity.

Besides the Census of Population, there are the results of a number of sample studies of agricultural employment; of these, the Crop Reporting Board data, collected monthly since 1923, are the most important.¹ But the fact that, for years prior to 1935 at least, the Census of Population provides

¹ For a description of these data, see especially E. E. Shaw and J. A. Hopkins, *Trends in Employment in Agriculture, 1909-36* (National Research Project, Philadelphia, 1938), Appendix C. The annual series derived by Shaw and Hopkins from these data are discussed below, pp. 239-44.

the only global estimates available, is responsible for the largest part of the difficulties that have to be faced in any attempt to estimate agricultural employment.

CENSUS DATA—GAINFUL WORKERS

The Census of Population totals for all persons living on farms, and for the number "gainfully occupied" in agriculture (i.e., reporting themselves as engaged in the industry, whether or not actually employed on the date of enumeration) are shown in Table 31. However, the comparability of the original Census data for gainfully occupied is not accepted even by the Bureau of the Census itself, which has recently published the revised series shown at the foot of the table.² It will be observed that about one person in three living on a farm is reported as occupied in agriculture: the remainder do not work regularly, are below or above working age, or are occupied in other industries.

The revisions undertaken by the Bureau of the Census—upward in 1900 and 1920, downward in 1910—are substantial. A brief discussion of the circumstances that gave rise to the revisions illustrates well the difficulty of estimating the size of the agricultural labor force, and in addition throws some light upon the validity of the revised totals themselves.

The reasons for the upward revision in 1920 are perhaps easiest to appreciate. The Census of that year was taken in January, when agricultural employment is lower than at other seasons. Many workers who would have reported themselves as engaged in agriculture, had the Census been taken later in the year, no doubt stated that they were unoccupied or elsewhere engaged. The revised total therefore represents

² U. S. Bureau of the Census, "Industrial Distribution of the Nation's Labor Force: 1870 to 1930" (Press release, Oct. 23, 1938). The revision represents an attempt to place numbers reported in earlier years upon the same basis as the total reported for 1930. It was made by the Bureau in conjunction with a reclassification of the occupation statistics of Censuses from 1870 to 1920 in order to conform to the classification used in 1930: the detailed results of this reclassification have yet to be published.

TABLE 31

FARM POPULATION, AND GAINFUL WORKERS IN AGRICULTURE^a*Thousands*

	<i>June 1 1900</i>	<i>April 15 1910</i>	<i>January 1 1920</i>	<i>April 1 1930</i>	<i>April 1 1940</i>
Farm population	..	32,077 ^d	31,614	30,445	30,547
Gainfully occupied, 10 years and over, original Census data ^b	10,249	12,388	10,666	10,472	9,163 ^c
231 Farmers (including managers and foremen)	5,779	6,183	6,480	6,079	..
Hired laborers	2,103	2,895	2,336	2,733	..
Unpaid family workers	2,366	3,311	1,850	1,660	..
Gainfully occupied, 10 years and over, Revision by Bureau of the Census ^c	10,912	11,592	11,449	10,472 ^c	9,163

^a All data in this table are derived directly or indirectly from the Census of Population.

^b As summarized by J. D. Black and J. C. Folsom, *Research in Farm Labor* (Social Science Research Council, 1933).

^c U. S. Bureau of the Census, "Trends in the Proportion of the Nation's Labor Force Engaged in Agriculture: 1820 to 1940" (Press release, March 28, 1942).

^d As estimated by Bureau of the Census; see *Agricultural Statistics, 1940* (U. S. Department of Agriculture), p. 553.

^e May be an underestimate because of omission of workers on some small farms: see below, pp. 243-44.

the presumed result of the 1920 Census had it been taken in April rather than in January.³

The Census of 1910 does not differ appreciably from that of 1930 in respect of date of enumeration, but variations in the field instructions apparently led to a substantial overcount of women and children⁴ among unpaid family labor in that year.⁵ That the coverage of the Census was considerably more inclusive in 1910 than in other years is apparent from the data presented in Table 32.

TABLE 32

FARM LABORERS REPORTED BY THE CENSUS

	1900	1910	1920	1930
Farm laborers				
Total	4,469,446	6,205,434	4,186,130	4,392,764
Women	457,766	1,115,565	615,230	519,934
Children, male	851,881	1,017,438	456,175	343,100
Children, female	207,200	410,142	187,999	126,397
Farm laborers per farm				
Total	.78	.97	.65	.70
Unpaid family workers	.41	.52	.29	.26

Source: J. D. Black and J. C. Folsom, *Research in Farm Labor* (Social Science Research Council, 1933), Table 1; *Fifteenth Census (1930)*, Vol. IV, p. 85.

Both the rather constant number of women workers, and the declining trend in the number of occupied children, are sharply disturbed by the large increases in these categories reported for 1910.

³ *Fourteenth Census (1920)*, Vol. IV, pp. 22-23.

⁴ I.e., workers aged 10 to 15 inclusive.

⁵ See especially *Thirteenth Census (1910)*, Vol. IV, pp. 26-29; *Fourteenth Census (1920)*, Vol. IV, pp. 18-24. If it is thought that, on the contrary, instructions in other years were insufficiently inclusive, the total for 1910 can of course be regarded as appropriate and the totals for other years considered too low. It is evident, however, that the Bureau of the Census believes that the 1910 instructions resulted in an overstatement, in relation to any reasonable definition of employment, and not merely in relation to the employment reported for other years. Hence the Bureau has revised the 1910 total downwards for comparability with 1930, in preference to the reverse process. It has been suggested (though not by the Bureau of the Census) that there is some undercoverage in the 1930 Census because of an undercount of small farms in that year (see below, pp. 243-44).

Since we must of necessity depend almost entirely upon the Census of Population for data concerning agricultural employment, it is worth while to consider first the metamorphosis of the instructions to enumerators since 1900. In 1900 the instruction was extremely brief: ⁶

154. Column 19. Occupation.—This question applies to every person 10 years of age and over who is at work, that is, occupied in gainful labor, and calls for the profession, trade, or branch of work upon which each person depends chiefly for support, or in which he is engaged ordinarily during the larger part of the time.

166. . . . Enter the older children of a farmer (who work on the farm) as farm laborers. . . .

Clearly in that year the enumerator might well have felt free to leave the occupation column blank; nor was he given any encouragement to press for an occupational designation where one was not immediately disclosed. No special directions were given as to the treatment of women and children working on farms.

The instructions to enumerators in 1910 have an entirely different emphasis:

144. Column 18. Trade or profession.—An entry should be made in this column for *every* person enumerated. The occupation, if any, followed by a child, of any age, or by a woman is just as important, for census purposes, as the occupation followed by a man. Therefore it must never be taken for granted, without inquiry, that a woman, or child, has no occupation.

154. Women doing farm work.—A woman working regularly at outdoor farm work, even though she works on the home farm for her husband, son, or other relative and does not receive money wages, should be returned in column 18 as a *farm laborer*. . . .

⁶ The quotations which follow are from the *Fourteenth Census (1920)*, Vol. IV, pp. 27-30; the italics appearing therein are in the original.

155. Children on farms.—In the case of children who work for their own parents on a farm . . . [or] as farm laborers for others . . . the entry should be *farm laborer*.

156. Children working for parents.—Children who work for their parents at home merely on general household work, on chores, or at odd times on other work, should be reported as having no occupation. Those, however, who materially assist their parents in the performance of work other than household work should be reported as having an occupation.

The unfortunate feature of the 1910 instruction appears to have been the statement that "an entry should be made . . . for *every* person enumerated" without at the same time explicit mention (except in the case of children working for their parents) that "no occupation" would be an acceptable description. The result has undoubtedly been the inclusion as agricultural workers of many who worked only occasionally. The entirely laudable desire to prevent sex discrimination in the minds of enumerators may have had a similar influence. At any rate the Bureau of the Census believes that the instructions led to a substantial overcount of women and children occupied in agriculture in 1910.

In the Census of 1920 a valiant attempt was made to define more precisely the type of information desired, and the instructions were amended as follows:

152. Column 26. Trade or profession.—An entry should be made in this column for *every* person enumerated. The entry should be either (1) the occupation pursued—that is, the word or words which most accurately indicate the particular kind of work done by which the person enumerated earns money or a money equivalent, as *physician, carpenter, dressmaker, laborer, newsboy*; or (2) *none* (that is, no occupation). The entry *none* should be made in the case of all persons who follow no gainful occupation.

159. Women doing farm work.—For a woman who works *only occasionally*, or *only a short time each day* at outdoor

farm or garden work, or in the dairy, or in caring for livestock or poultry, the return should be *none*; but for a woman who works *regularly* and *most of the time* at such work, the return should be *farm laborer* . . . Of course, a woman who herself operates or runs a farm or plantation should be reported as a *farmer* and not as a "farm laborer."

160. Children on farms.—In the case of children who work *regularly* for their own parents on a farm . . . [or] as farm laborers for others . . . the entry should be *farm laborer*.

161. Children working for parents.—Children who work for their parents at home merely on general household work, on chores, or at odd times on other work, should be reported as having no occupation. Those, however, who somewhat regularly assist their parents in the performance of work other than household work or chores should be reported as having an occupation.

As in previous Censuses, the enumerators in 1920 were instructed to include women and children occupied in agriculture: but they were now explicitly discouraged from doing so unless the persons concerned were engaged in farm work "regularly," or even "most of the time." In the opinion of the Bureau of the Census, these new qualifications appear to have met the case, for the instructions just quoted for 1920 were repeated, without material alteration, for the Census of 1930.⁷ It should be added that the revision made by the Bureau in its estimate of gainfully occupied persons in 1920 (Table 31 above) is believed to have been occasioned entirely by the date of the Census, and not by any belief that the instructions to enumerators in that year were still defective.

It should now be clear why the Bureau of the Census itself regarded the Census totals for numbers occupied in agriculture in 1900, 1910 and 1920 respectively as incomparable with similar data for 1930. The revisions shown at the foot of Table 31 therefore represent an attempt by the Bureau to at-

⁷ See instructions 186, 197, 199 and 200, *Fifteenth Census (1930)*, Vol. II, pp. 1400-01.

tain the presumed results of enumeration in earlier years, on the assumptions (1) that the Censuses of 1900 and 1920 had been taken in April, and not in June and January, respectively; (2) that the Censuses of 1900 and 1910 had been taken with the use of instructions to enumerators similar to those employed in 1920 and later years. It is plain that this attempt leads to a downward revision for 1910 and to an upward revision for 1920. It is less apparent, however, that it must result in an upward revision for 1900 (see Table 31). More people are employed in agriculture in June than in April, so that any revision occasioned by the date of the Census would cause a reduction in the total for 1900. On the other hand, the absence of any specific instruction concerning the occupational status of women doing farm work, and the small number of women reported as occupied in agriculture in that year (see Table 32), apparently call for an upward revision of the 1900 total which, in the view of the Bureau of the Census, more than offsets the downward revision on account of the date of enumeration.

CENSUS DATA—ALTERNATIVE SERIES

The revisions by the Bureau of the Census in the totals for persons gainfully occupied in agriculture were carried out with the help of the distribution by sex, and such distributions by age as the Census provides. The revisions are large: upward by 6.5 percent in 1900, downward by 6.4 percent in 1910, and upward by 7.3 percent in 1920. Obviously a very high degree of accuracy cannot be claimed for the resulting totals. The largest part of the variation in Census instructions, and of the consequent uncertainty in the size of the occupied population, relates to the counting of women and children. For this reason an alternative series may be constructed,⁸ showing only farmers and adult male laborers (i.e.,

⁸ See especially J. D. Black and Nora Boddy, "The Agricultural Situation, March, 1940," *Review of Economic Statistics*, Vol. XXII (May 1940), pp. 60-63.

TABLE 33

FARMERS AND ADULT MALE LABORERS IN AGRICULTURE

Thousands

	1900	1910	1920	1930
Farmers (including managers and foremen) ^a	5,779	6,183	6,480	6,079
Male farm laborers, 20 years and over ^b	2,025	2,541	2,151	2,491
Correction for date of Census, 1920 ^c	215	..
Farmers plus adult male laborers	7,804	8,724	8,846	8,570

^a From Table 31.^b J. D. Black and J. C. Folsom, *Research in Farm Labor* (Social Science Research Council, 1933), Table 3.^c Correction, one tenth of previous item, suggested by J. D. Black, "The Agricultural Situation, March, 1940," *Review of Economic Statistics*, May 1940, p. 60. E. E. Shaw and J. A. Hopkins give seasonal indexes for total employment of 81 for January 1st and 96 for April 1st; see *Trends in Employment in Agriculture, 1909-36* (National Research Project, Philadelphia, 1938), Table 2. So large a correction would be exces-sive, for not every worker unemployed in January will fail to report his occupation. (*Ibid.*, pp. 127-28.) An adjustment of 10 percent appears reasonable.

The index for June 1st is 116, and the 1900 Census may therefore have reported more laborers than it would have if taken in April. On the other hand such an overcount is probably compensated for by the character of the instructions to enumerators (see text); consequently no adjustment has been made in 1900 for the date of the Census.

males aged 20 years and over reporting themselves as occupied in agriculture). This series, which is not available for 1940 at the time of writing, is shown for Census years 1900 through 1930 in Table 33. While obviously less comprehensive than that developed by the Census Bureau in its revision of numbers gainfully occupied, it rests more directly upon Census data, and contains a smaller element of guesswork. It has the further advantage that farmers and adult male laborers are perhaps likely to be employed more regularly and intensively than the women and children who are now excluded. When the two series are placed on a 1930 base, the following comparison results:

TABLE 34

INDEXES OF AGRICULTURAL EMPLOYMENT

1930:100

<i>Year</i>	<i>Gainfully Occupied, 10 Years and Over^a</i>	<i>Farmers and Adult Male Laborers^b</i>
1900	104.2	91.1
1910	110.7	101.8
1920	109.3	103.2
1930	100.0	100.0
1940	87.5	..

^a From Table 31.^b From Table 33.

Taking this comparison at its face value, we may say that the whole number gainfully occupied in 1900 was about the same as, and in 1910 and 1920 considerably greater than, the number in 1930, whereas farmers and adult laborers were considerably less numerous in 1900, and about the same in number in 1910 and 1920 as in 1930. In other words, the importance of women and children as a group (included in the first series but not in the second) declined, both absolutely and relatively, between 1900 and 1930. Reference to Table 32 above, which shows the numbers of occupied women and

children reported by the Census, suggests (with allowance for the overcount in 1910) that this decline was concentrated among children. The number of women laborers does not seem to have changed significantly, but the number of occupied children appears to have been halved during the course of these three decades.

We have evidently to choose one of the two series—gainfully occupied, or farmers plus adult males—as a measure of the agricultural labor force. The decision should be governed, however, not merely by the appropriateness or inappropriateness of allowing for the decline in the number of child laborers. For, as the preceding discussion has emphasized, the count of occupied children, like the enumeration of women laborers, is itself subject to doubts and difficulties much more serious than in the case of farmers and adult males. This is the principal ground for preferring the second series to the first.

ANNUAL EMPLOYMENT DATA

Quite apart from uncertainties of the kind already discussed, the two series so far presented have further deficiencies. For they refer only to decennial Census years; and they measure the occupied population, i.e., the number of workers attached to agriculture, rather than the number actually employed. An attempt to overcome both these defects has been made by Eldon E. Shaw and John A. Hopkins in a series developed for the National Research Project and now continued by the Agricultural Marketing Service.⁹ Such an enterprise involves two steps. First, some relation must be established between the sizes of the occupied and employed populations at Census dates. Judging that employment in April is not very far from

⁹ See Shaw and Hopkins, *op. cit.*, especially Section II and Appendices A, C and D. A revision and extension of the same methods is described in A. R. Sabin, *A New Technique for the Estimation of Changes in Farm Employment* (U. S. Agricultural Marketing Service, New York, 1940).

the average for the year, the authors apparently treated the numbers reported by the Census of Population in 1910 and 1930 as "occupied in agriculture" as equivalent to "average numbers employed," the 1920 total being adjusted for the date of the Census.¹⁰ Second, a medium for interpolation between Census dates must be obtained; for this purpose Shaw and Hopkins used the crop-reporter estimates, available monthly since October 1923, for numbers of wage workers and unpaid family laborers, respectively, employed per farm.¹¹ The number of farms was estimated annually by fitting curves through Census dates,¹² so that the crop-reporter data for 1925 and later years could be converted into estimates of total employment. From the description they give, it is unfortunately not clear how the authors derived their annual employment estimates for 1909-24, but it is plain that these estimates must depend heavily upon curve-fitting between Census dates.¹³ The entire task was apparently carried out on a regional basis, and numerous adjustments, which it is impossible to review here, had to be made.

These annual series for farm employment, the only ones available, are reproduced in Table 35. In Chart 45 the Shaw-Hopkins total is plotted against the revised Bureau of the Census estimates already discussed; the Bureau of the Census revision was not available to Shaw and Hopkins.¹⁴ It cannot be said that the agreement is at all satisfactory. In principle, the Bureau of the Census series, which relates to numbers engaged in April, might be expected to fall short of the Shaw-Hopkins totals, which represent annual averages.¹⁵ On the

¹⁰ Shaw and Hopkins, *op. cit.*, p. 128. However, in 1930, the authors made various adjustments, some of which are discussed below.

¹¹ *Ibid.*, Appendix C.

¹² *Ibid.*, Appendix B.

¹³ *Ibid.*, Appendix A.

¹⁴ *Ibid.*, p. 127.

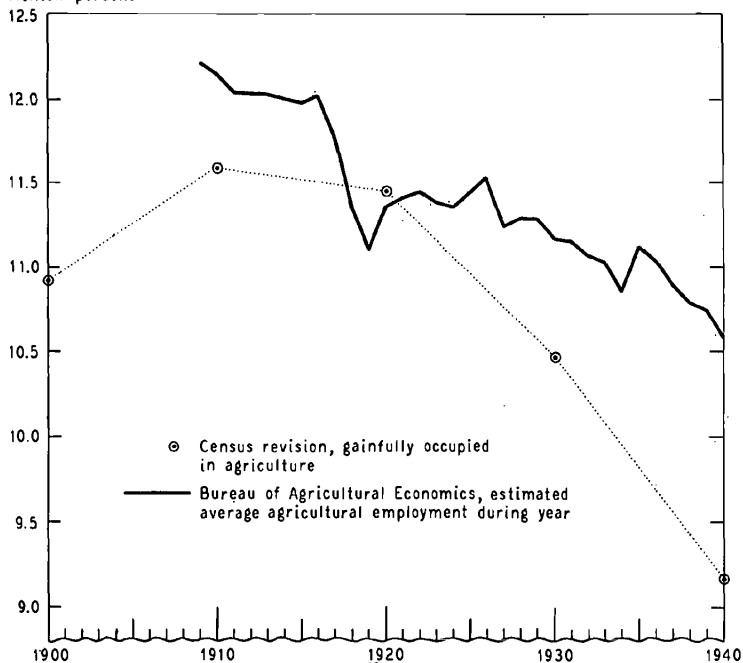
¹⁵ According to Shaw and Hopkins, April 1st employment averages 96 per cent of mean annual employment (*ibid.*, Table 2). The discrepancy should be smaller than this, for not all those unemployed on the date of enumeration would fail to return themselves as engaged in agriculture.

other hand, inasmuch as the authors exclude some 100,000 wage workers (or 1 percent of the total) who reported themselves as unemployed in 1930, the Bureau of the Census data should run correspondingly higher on this account. But these sources of disagreement are quite minor in character and par-

Chart 45

AGRICULTURAL EMPLOYMENT

Million persons



For source and notes see Appendix D

tially offset each other. In fact the Shaw-Hopkins series runs as much as 4.8 percent above the Bureau of the Census revision in 1910, 0.8 percent below in 1920, and 6.7 percent above in 1930.¹⁶ For two series whose level is derived from

¹⁶ See Tables 31 and 35. For 1940 the Bureau of Agricultural Economics extension of the Shaw-Hopkins data, included in Table 35, runs as much as 15.5 percent above the Census figure.

TABLE 35

AGRICULTURAL EMPLOYMENT^a

Bureau of Agricultural Economics Estimates

Thousands

<i>Year</i>	<i>Total Employment</i>	<i>Family Workers</i>	<i>Hired Workers</i>
1909	12,209	9,341	2,868
1910	12,146	9,269	2,877
1911	12,042	9,172	2,870
1912	12,038	9,149	2,889
1913	12,033	9,128	2,905
1914	12,000	9,081	2,919
1915	11,981	9,047	2,934
1916	12,016	9,050	2,966
1917	11,789	8,856	2,933
1918	11,348	8,507	2,841
1919	11,106	8,322	2,784
1920	11,362	8,479	2,883
1921	11,412	8,511	2,901
1922	11,443	8,528	2,915
1923	11,385	8,491	2,894
1924	11,362	8,488	2,874
1925	11,446	8,577	2,869
1926	11,534	8,507	3,027
1927	11,246	8,296	2,950
1928	11,296	8,340	2,956
1929	11,289	8,305	2,984
1930	11,173	8,323	2,850
1931	11,159	8,469	2,690
1932	11,069	8,571	2,498
1933	11,023	8,590	2,433
1934	10,852	8,506	2,346
1935	11,131	8,702	2,429
1936	11,047	8,486	2,561
1937	10,892	8,261	2,631
1938	10,796	8,176	2,620
1939	10,740	8,145	2,595
1940	10,585	8,019	2,566
1941	10,361	7,829	2,532

^a Average of persons employed on the first of each month. Compiled by the Agricultural Marketing Service. For 1909-34, see *Crops and Markets*, Jan. 1942, p. 5. For 1935-41, Bureau of Agricultural Economics release, April 16, 1942. The same series through 1934 may be found in E. E. Shaw and J. A. Hopkins, *Trends in Employment in Agriculture, 1909-36* (National Research Project, Philadelphia, 1938), Table 1; this table, however, contains several misprints.

common source material, these discrepancies are surprisingly large and call for comment.

It will be recalled that the Bureau of the Census made no revision of the reported total for numbers engaged in 1930. The excess of 700,000 in the Shaw-Hopkins estimate (see Chart 45) is therefore due entirely to revisions proposed by these authors. These revisions may be accounted for approximately as follows:

	(thousands)
Census total, gainfully occupied (April 1930) ¹⁷	10,472
minus unemployed hired workers ¹⁸	-104
plus adjustment for undercount of farms in 1930 ¹⁹	+422
plus difference between average employment for the year and employment in April ²⁰	+414
unaccounted for	-31
Shaw-Hopkins total for average employment in 1930 ²¹	11,173

The most important revision introduced by Shaw and Hopkins in 1930 therefore relates to an alleged undercount of farms. Black suggests that "150,000 or more small farms" were omitted in this Census.²² It is true that the Census of Agriculture taken in 1935 reported half a million more farms than were found in 1930, but this is very generally regarded as an overcount. The Bureau of the Census on the other hand refrained from making any such revision in its 1930 data for numbers occupied. To the deduction for unemployment there is no objection, but the addition of 400,000, or about 4 percent, to compensate for the difference between annual average and April employment seems of doubtful validity. Such an adjustment assumes that all persons seasonally unemployed in April would report themselves as without an agricultural occupation. If required at all, the adjustment

¹⁷ *Census of Population, 1930*, Vol. V, p. 40; see Table 31 above.

¹⁸ *Abstract of the Fifteenth Census (1930)*, p. 477.

¹⁹ Daniel Carson, "Labor Supply and Employment" (unpublished report for the National Research Project), Table D-4a.

²⁰ *Trends in Employment in Agriculture, 1909-36*, Table H-1.

²¹ Table 35.

²² *Review of Economic Statistics* (May 1940), p. 60.

should be much smaller than that made by the authors. Moreover these adjustments are not made for other Census years, and are therefore not really needed in 1930 to establish comparability with earlier Censuses.

It may well be that there was some underreporting of farms in 1930 and a corresponding undercount of the working population.²³ In that case a comparable series for Census dates would, in 1930, lie somewhat above the 10,472 thousand reported for that year, and not far from the 10,912 thousand obtained by the Bureau of the Census revision for 1900. It seems safe to conclude that, if we include women and child laborers, agricultural employment in 1930 was exceedingly close to its level in 1900.

In 1920 the Shaw-Hopkins annual series is very close to the Bureau of the Census revision, the adjustment made for the date of the Census being almost the same in the two series. No special comment on this point is required. The much higher total given by Shaw and Hopkins in 1910 is attributable to the far less extensive downward revision they made (because of the overcount of women and children in that year) than was made by the Bureau of the Census. Finally, for 1940 the extension of the Shaw-Hopkins data by the Bureau of Agricultural Economics (Table 35) comes out as much as 1.4 million above the corresponding figure from the 1940 Census of Population. During recent years at any rate, the Bureau of Agricultural Economics series appears to have a substantial upward bias. For all these reasons we have preferred the Bureau of the Census revision to the Shaw-Hopkins series, and have used the latter only for purposes of interpolation.²⁴

²³ For the manner in which an undercount of farms may lead to an undercount of farmers, see J. D. Black and R. H. Allen, "The Counting of Farms in the United States," *Journal of the American Statistical Association*, Vol. 32 (Sept. 1937), pp. 444-45.

²⁴ In the present study we have used the Bureau of Agricultural Economics employment series (Table 35) only as a means of interpolating the Bureau of the Census estimates (Table 31): see Tables 37, 38 and 45 below.

SUMMARY

Data on agricultural employment have to be derived from the number of persons reported by the Census of Population as occupied in agriculture. Because of variations of interpretation by Census enumerators, it is extremely difficult to estimate reliably the trend of agricultural employment even over a period as long as forty years. The following outline probably embodies all that can be said with any sense of security; the movements are summarized in Table 36 below.

After 1900 numbers gainfully occupied appear to have increased for about a decade, and to have reached a maximum at a level some 5 or 10 percent above that at the opening of the century. Thereafter this total declined fairly steadily: in 1930 it was about the same as, or slightly below, the figure for 1900. In 1940 persons gainfully occupied in agriculture were substantially less numerous than at the opening of the century. While the proportion of women workers did not vary greatly, these movements in the occupied population as a whole conceal a sharp decline in the relative importance of child labor.²⁵ The number of children occupied in 1930 was about half the number occupied in 1900.

Difficulties in the statistical treatment of women and children engaged in agriculture make it convenient to use the number of farmers plus adult male laborers as an alternative measure of agricultural employment. Because of the decline in the importance of child labor just noted, this alternative series rises by somewhat more than 10 percent between 1900 and 1910, and thereafter remains approximately stable. Both series will be used for the survey of agricultural productivity in Chapter 7.

The comparative mildness of the changes in the agricultural working population did not prevent a steady decline in the

²⁵ The entire occupied population includes persons 10 years of age and over: the Census defines a child as aged 10 to 15 inclusive.

TABLE 36

INDEXES OF AGRICULTURAL EMPLOYMENT, 1900-40

<i>Year</i>	<i>Gainfully Occupied, 10 Years and Over^a</i>	<i>Farmers and Adult Male Laborers^b</i>	<i>Gainfully Occupied in Agriculture as Percent of</i>
			<i>Gainfully Occupied, All Occupations^c</i>
	(1900: 100)		
1900	100	100	37.5
1910	106.2	111.8	31.0
1920	104.9	113.4	27.0
1930	96.0 ^d	109.8	21.4
1940	84.0	..	17.6

^a Based on data in Table 31.^b Based on data in Table 33.^c Bureau of the Census releases of October 23, 1938 and March 28, 1942.^d May be an underestimate, owing to omission of workers on some small farms. See text.

relative importance of agriculture among occupations in general; this decline reflects, of course, the rapid rise—from 29 million in 1900 to 52 million in 1940—of the occupied population as a whole. To the general question of the position of agriculture in the national economy, and its prospects as a source of livelihood, we shall return in Chapter 8.