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## 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 United States 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.

#### 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 1945-1949, 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 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.

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

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>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.