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## APPENDIX C

### DERIVATION OF DECADE POPULATION CHANGE ESTIMATES

Two different procedures were used in determining the decade population change of cities — one for cities above 25,000 population and the other for cities below 25,000 population. For each city of 25,000 or more in each censal year, 1890-1930, in the three sample divisions, population figures were obtained from the Census volumes of each decade. The cities were then classified into their proper size classes. For all cities within a given size class in a given censal year, the population at the current, the preceding, and the following censal year was determined. Thus for each of the first three size classes it was possible to determine the change in population between a given censal year and the preceding censal year and between the given censal year and the following censal year for the specific cities classified in a given size class in the current censal year.

For size class IV (2,500 to 24,999), some of the smaller cities could not be traced from one Census volume to the next. In a few cases small changes in population in cities at the lower end of the classification range shifted them in or out of the size class. In other cases changes in name made comparison impossible. In still other cases cities that had over 2,500 population at one censal year were not yet in existence at the preceding censal year. As a result, special estimating procedures were employed for this size class.

The cities in this class in each censal year were listed. The population at the preceding censal year of such of these cities as could be traced to that year was obtained; the population in the given censal year of these traced cities was also determined.<sup>1</sup> The decade percentage change in population of this group of cities was then applied to the full population of the size class in the given censal year to yield an estimate of the change in population between the preceding and given censal years of the full list of cities in the size class in the current censal year. A similar procedure was followed to obtain estimates of the change in population between the given and the following censal years of cities in a given size class in the given censal year.

Similar estimates were made of the decade changes in population of the reporting cities in each size class in each year. Whenever the sample in any size class varied from year to year, the decade population change associated with the sample had to be recomputed for each year.

<sup>1</sup> In all cases except two regions in one censal year, more than 90 per cent of the cities in this size class could be traced to the preceding and following censal years.

The basic classification procedure in this project involves the centering of population classifications around the censal year. In accordance with this approach, for each censal year and for the four years following, the city size classification of the censal year was used as the basis for determining the decade change in population. For the five years preceding the next censal year, the city size classification of that censal year provided the basis for determining the decade change in population.

To illustrate, the decade change in population for both the reporting cities and the full list of cities in any size class, employed in the calculations for each year, 1900-1904, in each division, was defined as the change in population between 1900 and 1910 of both groups of cities, classified according to their size class in 1900. The decade change in population used for each year, 1905-1909, was the change in population, 1900-10, as it was derived from the cities classified according to their size class in 1910.