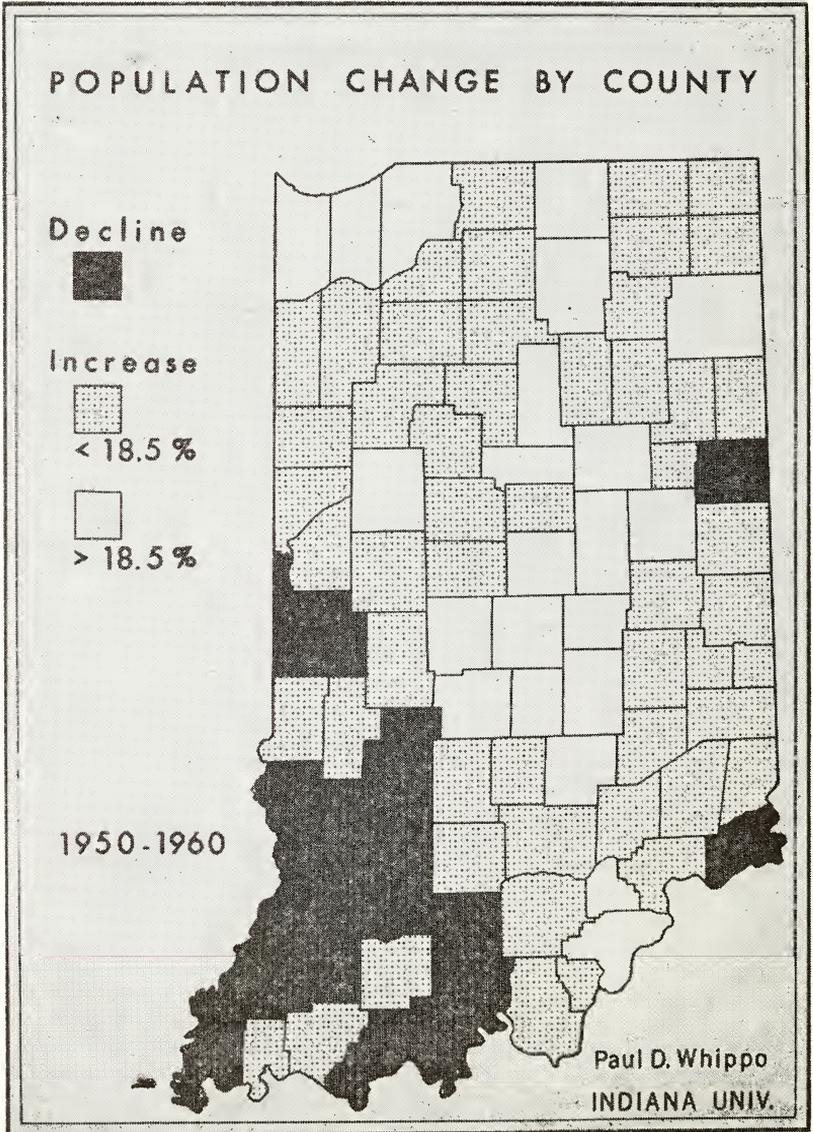


Distribution of Population Change in Indiana, 1950-1960

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In the past, most population studies have employed the county unit for mapping and describing population change. While one may list a number of advantages for selecting the county unit in preference to a smaller areal unit, the fact that the county is the larger unit is a disad-



Map 1

vantage in so much as many significant population changes in the smaller areas are obscured. This paper is an attempt to illustrate some of these obscurities and thereby to more accurately describe the change in population which has taken place in Indiana during the 1950-1960 decade through the comparison of a county unit map depicting the distribution of population change for this period with a civil township unit map.

The rate of change in population per unit area on each map has been computed from data in the 1950 (1) and 1960 (2) United States Censuses of Population. To facilitate the handling of the numerous rates at which population change has occurred, the rates of change have been grouped into three categories: (1) areas of population decline, (2) minimum gain areas which increased in population at a lesser rate than did the state (18.5 per cent), and (3) maximum gain areas which increased in population at a greater rate than did the state.

From the county unit map (map #1), it would appear that population decline is concentrated in fifteen southwestern counties and limited to three additional counties in the eastern part of the state. However, the township unit map (map #2) reveals a different pattern. Based on the average thirty-six square mile township, thirty-three per cent of the total area of the state is computed to have lost population as compared to only nineteen per cent of the total area when the county unit is used. Also, from the township unit map it is disclosed that only forty-one per cent of the area which lost population is located in the eighteen declining counties.

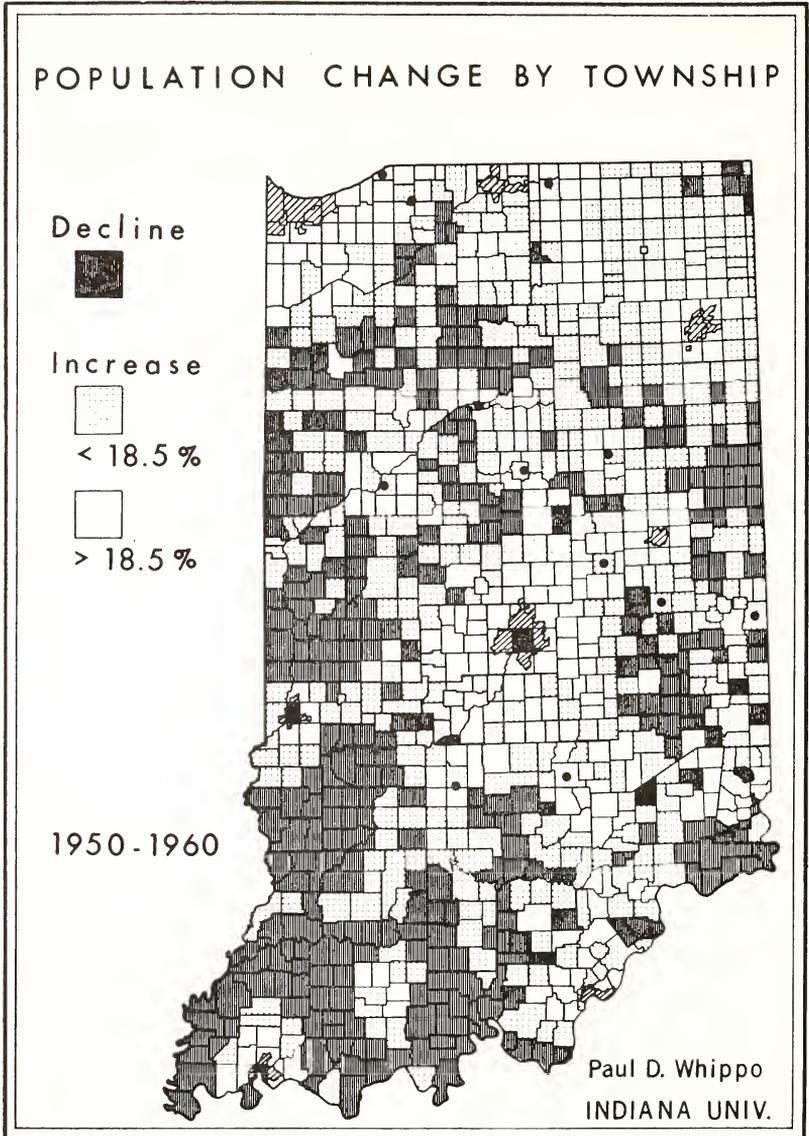
These discrepancies in the size and dispersion of areas of decline are the product of averaging the maximum increase in population of a few townships among all of the townships within the county. Warrick and Rush Counties illustrate this most vividly; seven of the ten townships in Warrick County and eight of the twelve townships in Rush County lost population during the ten year period, but still both counties were able to record an increase in population on the county unit map.

The averaging process is also observable when the urban areas on the two maps are compared. While both maps relate the areas of maximum increase in population with established cities, the maximum gain associated with six cities (Evansville, Terre Haute, South Bend, Bloomington, Logansport and Richland) on the township unit map are obscured by the larger county unit.

Thus, an evaluation of the comparison of the two maps at this point would indicate (1) a larger and more dispersed area of population decline than is depicted on the county unit map, and (2) a closer correlation of areas of maximum population gain with urban places. However, a third point to be made is that the township unit permits a more precise description of the pattern of population change associated with urban areas.

This pattern may be described as analogous to a 'doughnut,' with the 'doughnut' representing the area of maximum growth, and encompassing an urbanized township which experienced a relatively small increase or an actual decline in population.

The "doughnut" pattern is illustrated on the nine county-Indianapolis area map (map #3) which was constructed by consigning the rates of population change for each township to the geographic center of the township and interpolating there from the isopleths of population change. The

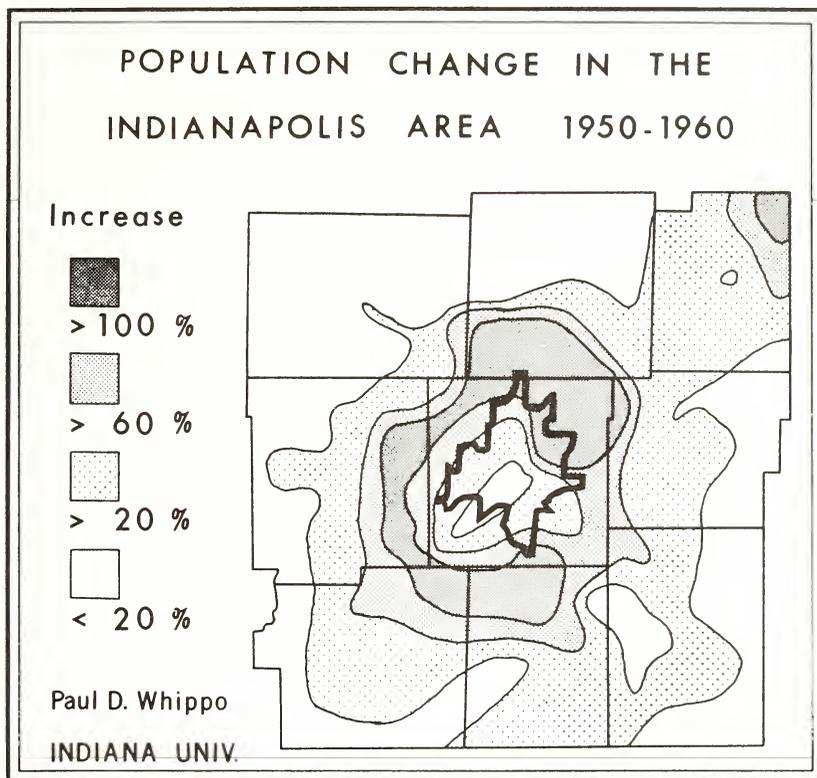


Map 2

“doughnut” depicts the greatest increase in population to be, not in the urbanized area or suburban fringe, but in the second tier of townships from the city, with the steepest gradient of population change on the city side of the “doughnut.” This method of mapping population change illustrates the importance of the city as a place of employment, and the small towns and rural areas as a place of residence.

Three cities experienced the aforementioned decline in population of the "core" township: Indianapolis, Terre Haute, and Evansville, and the actual loss in population for the three townships, 32,944 persons, represents fifty-one per cent of the total loss for all of the declining townships. This would seem to indicate that urban to rural movement is equally as important as rural to urban movement in the population redistribution.

Although the Indianapolis area is the only example of the "doughnut" pattern to be described in this paper, it should suffice to say that the pattern prevails in eighteen of the remaining nineteen urban places in Indiana with over 20,000 persons.



Map 3

Literature Cited

1. U. S. Bureau of the Census. 1950. *U. S. Census of Population: 1*, U. S. Government Printing Office, Washington, D. C. 1951.
2. U. S. Bureau of the Census, *U. S. Census of Population: 1960 Advance Report, 1C (A1)-16*, November 30, 1960.