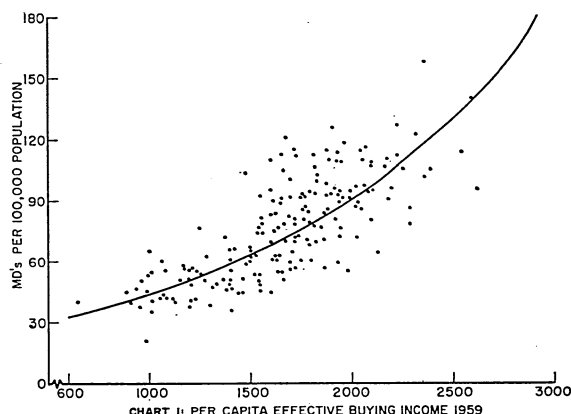




data presented in Chart I thus are based on the number of physicians, the size of the population, and the per capita income of the population in each county group for the entire country in 1959.<sup>4</sup> Each observation is for a county group, of which there are one to five in each state.

The distribution is stated in terms of privately employed physicians, both general practitioners and specialists, per one hundred thousand persons in a county group. This measure excludes all federal physicians, all retired or inactive physicians, and all full-time hospital, teaching, and research physicians. In an analysis of the role of economic variables in the spatial distribution of physicians these exclusions seem to be clearly desirable. The income measure to which the physician-population ratio is related in Chart I is the county group per capita net effective buying income.<sup>5</sup>

metropolitan physicians, which tends to understate the effective physician-population ratio for adjacent areas and to overstate it for metropolitan areas. Isolated areas are more likely to be self-sufficient.

<sup>4</sup> The data for Chart I are from *Health Manpower Source Book*, Section 10.

<sup>5</sup> Net effective buying income is identical with "disposable personal income" as computed by the Department of Commerce. See *Sales Management*, May 1961, pp. 54-56. The physician-population ratios and the per capita incomes are weighted averages of all counties of a given county group.

The most significant aspect of the distribution presented in Chart I is the tendency of the physician-population ratio to rise with increases in regional per capita income.<sup>6</sup> For instance, at the \$1,000 per capita income level the average ratio is about 45 physicians per 100,000 population, but at the \$2,000 level it is around 90 physicians per 100,000 population. This doubling in the number of physicians in relation to population is not due solely to changes in income. Low income county groups are almost exclusively rural while high income county groups are metropolitan areas. Income and environment change together, which makes it impossible to separate their impacts. There are valid reasons for believing that both higher incomes and urban environment attract more doctors, but we are concerned primarily with the question of how larger incomes may account for higher physician-population ratios.

### III. THEORETICAL INTERPRETATION

This section develops hypotheses to explain the rise of the physician-population ratio with increases in per capita income.

<sup>6</sup> The relationship is mildly curvilinear as indicated by the equation  $y = 21.24(2.058)^x$  for the regression line fitted by least squares.