

problem of economies of scale in public education in a deductive manner and on the basis of a case study, and finds that growth or consolidation of school districts are unlikely to produce significant economies of scale.⁹

2. Sociological characteristics of population

(a) *Age structure.*—Not only does the age structure of the population affect the size of the school-age population, it also affects the percent of pupils in high school as against that in primary schools. Since on the average there are fewer high school pupils per teacher, more expensive equipment is needed, and salaries tend to be higher in secondary education; changes in this ratio can affect overall education costs.

During 1900–1958, the percent of the high school age population has changed and with it also high school enrollment as a percent of total enrollment in public schools.¹⁰ By how much the latter has increased can be seen by referring to table 8, which presents for 1900–1958 high school enrollment relative to total enrollment. The 1900–1958 increase was about 580 percent.

TABLE 8.—Public high school relative to total public enrollment, selected years, 1900–1958

Public high school as a percent of total public enrollment		Public high school as a percent of total public enrollment		Public high school as a percent of total public enrollment	
Year:		Year—Con.		Year—Con.	
1900.....	3.3	1930.....	17.1	1950.....	22.8
1902.....	3.5	1932.....	19.6	1952.....	22.1
1910.....	5.1	1940.....	26.0	1954.....	21.8
1913.....	6.1	1942.....	26.0	1956.....	22.1
1920.....	10.2	1946.....	24.1	1958.....	22.4
1922.....	12.4	1948.....	23.6		

Sources: Worksheets of historical education series collected by Vance Grant, educational statistician, Division of Statistics and Research Services, Reference, Estimates, and Projections Section, U.S. Department of Health, Education, and Welfare, Office of Education.

(b) *Geographical distribution.*—Rapid urbanization has affected our public schools and possibly their expenditures. For example, in urban communities children live shorter distances from school than they do in rural communities; many urban communities need no school buses, while most rural communities do. Furthermore, in many rural communities school enrollment is alarmingly small; some of them still have one-teacher schools. As a result, per pupil expenditures tend to be high, considering the low quality of education that is offered.

Thus, it stands to reason that increasing urbanization has tended to lead to lower per pupil expenditures, particularly if the scope and quality of education is held constant.

⁹ Werner Z. Hirsch, "Expenditure Implications of Metropolitan Growth and Consolidation," *Review of Economics and Statistics* (41), August 1959.

¹⁰ This information could only be obtained on the basis of enrollment and not pupils in average daily attendance. However, both series are likely to be highly correlated.