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National Education Association

The Ability of the States to Support Education

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Research Bulletin
OF THE
National Education Association

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(For index see page 261)

The Research Bulletin is issued by the Research Division, a part of the headquarters staff of the National Education Association. This division was organized in February, 1922, for the purpose of conducting scientific studies of special interest to members of the teaching profession.

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RESEARCH DIVISION
THE NATIONAL EDUCATION ASSOCIATION
OF THE UNITED STATES

1201 Sixteenth Street Northwest, Washington, D. C.

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- Facts for American Education Week.* Bulletin 2, November, 1922. 40 pp. Price per copy, 25 cents.
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- Keeping Pace With the Advancing Curriculum.* Vol. III, Nos. 4 and 5, September and November, 1925. 96 pp. Price per copy, 50 cents.
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FOREWORD



THE National Education Association since its organization has led in the study of the question of the proper relation of the national government to educational development. Through the Association those who believe in public schools have clarified and put into action their thinking on this important problem.

Among the phases of this whole issue which has received special attention in recent years is that revolving about the question of the desirable extent and proper method of applying federal financial support to public education. This question is still unanswered. It should be answered on the basis of facts and sound reasoning.

Consequently, the Association may well recognize as one of its permanent functions the encouragement of investigations which approach this question in an open-minded manner in a search for facts upon which to base thoughtful action. The Association is glad, therefore, to make this study available. Its contribution is the presentation and judicial interpretation of the most comprehensive data yet assembled as to the comparative ability of the states to meet their educational obligations.

The investigation is an important contribution to scientific literature bearing upon this question. It should be of great service to students of school finance. Its value will be readily recognized by workers in this field.

J. W. CRABTREE, *Secretary,*
National Education Association.

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Introduction—The Problem

The question of the part the National Government should play in the field of public education antedates the foundation of our present government. In the Ordinance of 1785, before the adoption of the Constitution, the Continental Congress led the central government into important connections with education by reserving lot number 16 of every township "for the maintenance of public schools."¹ From the time of this action, which was incidental to the development of a policy for the sale of the public lands, there may be traced a long line of Congressional acts relating to education.² At present, the federal government exercises many important educational functions including the annual appropriation of millions of dollars for educational investigations and for the support of public schools located throughout the states and territories under its jurisdiction.³

In recent decades, the question of the proper relation of the federal government to education has been widely discussed and has received much consideration by Congress.⁴ The discussions of this question have circulated about two proposals. The first would have the national government develop a program of educational investigation and research through a Department of Education. This is the object of the education Bill (S. 291; H. R. 5000) now before the Sixty-ninth Congress. The recent Congressional Hearings revealed leaders in the field of public education to be rather generally agreed as to the desirability of creating a Department of Education whose primary function would be the conduct of investigations and researches in the field of education.⁵

The second proposal would substantially increase federal financial support to education within the states to achieve greater equality of educational opportunity. This proposal is not included in any bill now before Congress, although it has been a part of measures before former Congresses. The recent hearings made it clear that educational leaders were not unanimous as to the desirability of further federal support for education at this time.⁶

Some educators feel that more facts than we now have are needed before we can wisely settle such questions as the extent and proper method of applying federal financial support to education, and the limits within which equalization of educational opportunity is practical.⁶

The purpose of this investigation is to assemble and present in usable form data pertinent to scientific inquiry as to the wisdom of extending the principle of federal aid for education. More specifically, it aims to present statistical data needed in the study of these questions:

1. What is the relative ability of the states of the Union to support education providing they tap their economic resources in an ideal manner?
2. What are some of the accompaniments of such differences as exist in the ability of the states to support education?
3. Are such differences as exist in the economic ability of the states to support education temporary or relatively permanent?
4. What factors will have to be scientifically measured in arriving at an exact statement of the comparative ability of the states to support education?

¹ *Laws of United States of America, 1789-1815*, Vol. I, Chap. 32, p. 563-569.

² Reiser, Edward H. *Nationalism and Education since 1789*. New York, The Macmillan Company, 1922, p. 338 f., 373 f., etc.

³ See the following references:

(a) Newcomer, Mabel. *Financial Statistics of Public Education in the United States, 1910-1920*. The Macmillan Company, New York, 1924, p. 49 and 50.

(b) Treasury Department. *Digest of Appropriations*. Year ending June 30, 1926. Washington Government Printing Office, 1925, p. 42 to 44 and 246 to 249.

⁴ See bibliography, p. 82.

⁵ Joint Hearings before the Sixty-ninth Congress on the Education Bill (S. 291—H. R. 5000).

⁶ Mann, C. R. National Organization of Education. *The Educational Record*, Vol. VI, No. 2, April 1925, p. 56.

The study will not deal with what might be termed the philosophical aspects of the question under consideration. The merits of centralized versus decentralized administration, the doctrine of states' rights, and the relation of education and the Constitution have al-

ready been amply dealt with by the writers referred to in the selected bibliography. Rather, the study will confine itself to the presentation of objective data in a form designed to make them most useful to students of education.



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CHAPTER I

The Economic Resources of the States Compared

The first object of this study is to give a quantitative answer to this question: What is the relative ability of the states of the union to support education providing they tap their economic resources in an ideal manner?

Before this question can be answered it will be necessary to measure the economic resources of each state. Support for education in a community must always come out of its total supply of economic energy. In determining the ability of a state to support education, it is first necessary to know the economic strength of the state.

This chapter seeks to present the best comparable data available as to the economic resources of the forty-eight states of the union.¹ In comparing the resources from which the various states may draw their support for education, all factors will be eliminated from consideration but the one which has been called "economic strength and vigor."² Such factors as the value placed upon education by the people of a state, their faith in the competency of their school officers, the size of the school district unit, the effectiveness of the machinery of taxation, and the responsiveness of governmental organization to the wishes of the community, are of secondary consideration in this study. They refer more to factors influencing the use of economic resources than to their existence. In referring to a state's ability to support education we shall have in mind its bare economic resources, not the factors that may influence its use of these resources in supporting education.

The most commonly used indices of economic power are wealth and income. Fortunately estimates of the wealth and of the income of each of the states have recently

been completed by reliable agencies. These estimates will be proposed as two separate and distinct indications of the relative economic resources of the states.

Wealth as a Measure of Economic Power

The aggregate wealth of the states may be obtained from the 1922 Federal Census of Wealth. This census estimates ". . . the material wealth or value of tangible property located within the limits of continental United States . . ."³ The total wealth of the nation is apportioned among the states so that "the estimate for a given state measures, to such a degree of exactness as could be attained, the value of properties within the state."⁴

Wealth is proposed as a measure of economic power with a full realization of the difficulties encountered in taking the census of wealth. A degree of error is inevitable in the final results of such an undertaking.⁴ Nevertheless, the Bureau of the Census brings to bear upon this problem the experience of a capable group of economists and statisticians supported by the unequaled resources of the federal government for obtaining information. The results of their work have already been accepted by economists of standing as a basis for important investigations.⁵ It is believed that the census of wealth is sufficiently accurate to justify such conclusions as will be based upon it.

Even though the substantial accuracy of the federal estimate of wealth is accepted, it may be objected that under modern economic conditions wealth has serious limitations as an index of tax-paying ability. The full force of this accepted fact holds only when individuals are concerned. The wide discrepan-

¹ The District of Columbia is omitted from consideration throughout this study. Certain characteristics peculiar to the District of Columbia made such omission seem desirable.

² Strayer, George D. and Haig, Robert Murray, *Financing of Education in the State of New York*. p. 127-128.

³ *Estimated National Wealth* Bureau of the Census, p. 1.

⁴ For a description of the methods employed in the census of wealth and a discussion of their probable effect on the accuracy of final results one should refer to the "Foreword," p. vii to xiii, and the "Introduction," p. 1 to 20 of *Estimated National Wealth*, Bureau of the Census.

⁵ Willford I. King, in his *Wealth and Income of the American People*, states, p. 4, ". . . after the advent of the Twelfth Census (1900), one can proceed to analyze the figures in very considerable detail with a comfortable feeling of assurance that the results are approximately correct."

cies between property ownership and ability to pay in the case of individuals tend to decrease when as large a unit as a state is being considered.

The Committee appointed by the National Tax Association to prepare a plan for a model system of state and local taxation, composed of an authoritative group of economists and taxation experts, accepted tangible property as one of the bases of its model plan for raising revenue in a state.¹

These considerations as well as evidence presented later seem to justify the use in a scientific investigation of the value of tangible property in a state as a measure of its economic power.² Furthermore, wealth is not the only measure of economic power proposed. An alternative is presented in the next section.

Some might prefer a segment of the aggregate wealth of a state, such as the value of real estate and improvements, as a measure of its economic resources. This and other

divisions of aggregate wealth which might have been used as a measure of economic power were considered and rejected because the arguments for their use, rather than the aggregate, were not convincing. The relative economic power of the states indicated by the value of real estate and improvements is not significantly different in most cases from that based on total wealth. An increase or a decrease of fifteen percent or less in the value of realty in the case of thirty-seven of the forty-eight states would bring them into exact agreement with the ratio of the value of realty to total wealth for the country as a whole.³

Aggregate wealth, with but one deduction, is therefore proposed as one measure of economic power. This deduction is federal property. The bulk of the value of federal property such as the public domain, mineral resources and forest reserves, included in the estimate of the total wealth of each state by the Bureau of the Census, is subtracted in the

¹ The report is dated September, 1918, and is available in the printed volume of the *Proceedings of the Association for 1919*, p. 426-470. National Tax Association, 195 Broadway, New York City, N. Y. Students of taxation differ, however, as to whether property as a source of tax revenue should include all tangible property or merely real estate.

² See discussion, pp. 12 to 17.

³ See Table A, p. 72. In proposing wealth as a measure of economic power, it is not meant to suggest that the general property tax is a desirable instrument for the raising of public revenue.

TABLE 1.—ESTIMATED VALUE OF TANGIBLE WEALTH OF THE STATES, 1922
(Expressed in thousands of dollars)

States	Wealth	States	Wealth
1	2	3	4
United States.....	\$310,042,785	Montana.....	\$2,079,123
Alabama.....	2,913,467	Nebraska.....	5,302,454
Arizona.....	1,220,290	Nevada.....	455,959
Arkansas.....	2,587,642	New Hampshire.....	1,351,745
California.....	14,677,855	New Jersey.....	11,743,251
Colorado.....	3,126,464	New Mexico.....	774,781
Connecticut.....	5,281,849	New York.....	36,871,432
Delaware.....	617,217	North Carolina.....	4,520,052
Florida.....	2,431,235	North Dakota.....	2,463,653
Georgia.....	3,867,489	Ohio.....	18,458,563
Idaho.....	1,387,166	Oklahoma.....	3,986,341
Illinois.....	22,171,960	Oregon.....	3,206,783
Indiana.....	8,812,871	Pennsylvania.....	28,718,937
Iowa.....	10,494,918	Rhode Island.....	1,918,098
Kansas.....	6,234,560	South Carolina.....	2,381,674
Kentucky.....	3,556,843	South Dakota.....	2,909,538
Louisiana.....	3,393,690	Tennessee.....	4,217,940
Maine.....	1,998,845	Texas.....	9,803,548
Maryland.....	3,936,717	Utah.....	1,457,536
Massachusetts.....	12,878,793	Vermont.....	839,691
Michigan.....	11,382,054	Virginia.....	4,762,633
Minnesota.....	8,530,864	Washington.....	4,978,164
Mississippi.....	2,175,530	West Virginia.....	4,648,599
Missouri.....	9,973,901	Wisconsin.....	7,860,407
		Wyoming.....	679,663

These figures are based on Table 4, column 2, p. 21, *Estimated National Wealth*, Bureau of the Census. They exclude from the grand total and from the estimates for individual states most of the value of property owned and controlled by the federal Government and all property located in the District of Columbia. See Table A, Appendix p. 72, for details as to these deductions.

figures given in Table 1. Federal property is controlled by the national government and is only potentially an economic part of a state in so far as its availability as a source of revenue is concerned.¹ In most states this form of wealth constitutes a negligible portion of the aggregate.² In some of the western states, however, such as Wyoming and Nevada where 30 and 16 percent respectively of wealth value still remains under federal jurisdiction, this form of wealth is significant. The value of federal property is, therefore, subtracted from the aggregate wealth of each state as estimated by the Bureau of the Census. Table 1 gives the resulting estimate of wealth for each of the states which will be used in future calculations as one measure of their comparative economic power. Chart I reveals in graphic form the wide variations existing in the amount of wealth located in different states. New York has tangible wealth valued at \$36,871,432,000, while Nevada has wealth valued at \$455,959,000.

Income as a Measure of Economic Power

Income is proposed as a second and distinct measure of economic power. Estimates of the income of the forty-eight states for three years, 1919, 1920, and 1921, have recently been issued by a private agency, the National Bureau of Economic Research.³ It is upon these estimates that a second index of the comparative economic power of the states will be based.

The meaning of income is explained in the following quotation:

If every individual kept an accurate set of private accounts and thereby arrived at his net money income for the year, and if all these net incomes were added together, the resulting totals would be those which this report attempts to approximate.⁴

This or any brief statement is inadequate to a complete understanding of the term. Such an understanding can be approached by studying the methods employed in arriving at the estimates of income. It is without the scope of this investigation, however, to describe these methods in detail. They are fully presented in the references cited in the bibliography.

It will suffice here to point out that individual income is composed of two parts: (1) *Current* income, made up of wages or salaries, interest, dividends, rents, business profits and the like, and (2) *total* income, consisting of current income plus gains or losses in the value of property owned.⁵

Economists are not in complete agreement as to the merits of these two concepts of income. For that reason the figures for both current and total income will be presented, and many of the calculations in which income is one factor will show the results both for current and total income. We will have in mind, however, the probable greater accuracy of the figures for current income as well as the opinion of some economists that it is preferable to total income as a measure of general economic status.⁶ For these reasons when it seems desirable to use but one form of income in a calculation involving income, current income will be preferred.

The difficulties that stand in the way of a wholly accurate estimate of income are comparable to those encountered in the census of wealth. Consequently, a degree of error in the final estimates must be assumed. The character of the executive and advisory staff of the Bureau of Economic Research is such, however, as to justify belief that such error

¹ In the case of states affected by the federal mineral royalty act of 1920, this statement needs some modification. This act provides that states in which are situated federal lands containing non-metallic mineral deposits are to receive a percentum of the royalties realized for the lease of these lands. The income from this source is negligible except in three states: Wyoming, California and Montana. Wyoming received nearly a million dollars from this fund in 1921 or a sum representing approximately 20 percent of the state's school costs. See, Fletcher Harper Swift, "The Most Recent Federal Grant to Public Schools," *School Board Journal*, December, 1922, p. 45 f., and *Biennial Report of the State Department of Wyoming, 1922-24*, Cheyenne, Wyoming, pp. 76 and 82.

² See Table A, column 6, p. 72.

³ Leven, Maurice, *Income in the United States*. National Bureau of Economic Research, 1925.

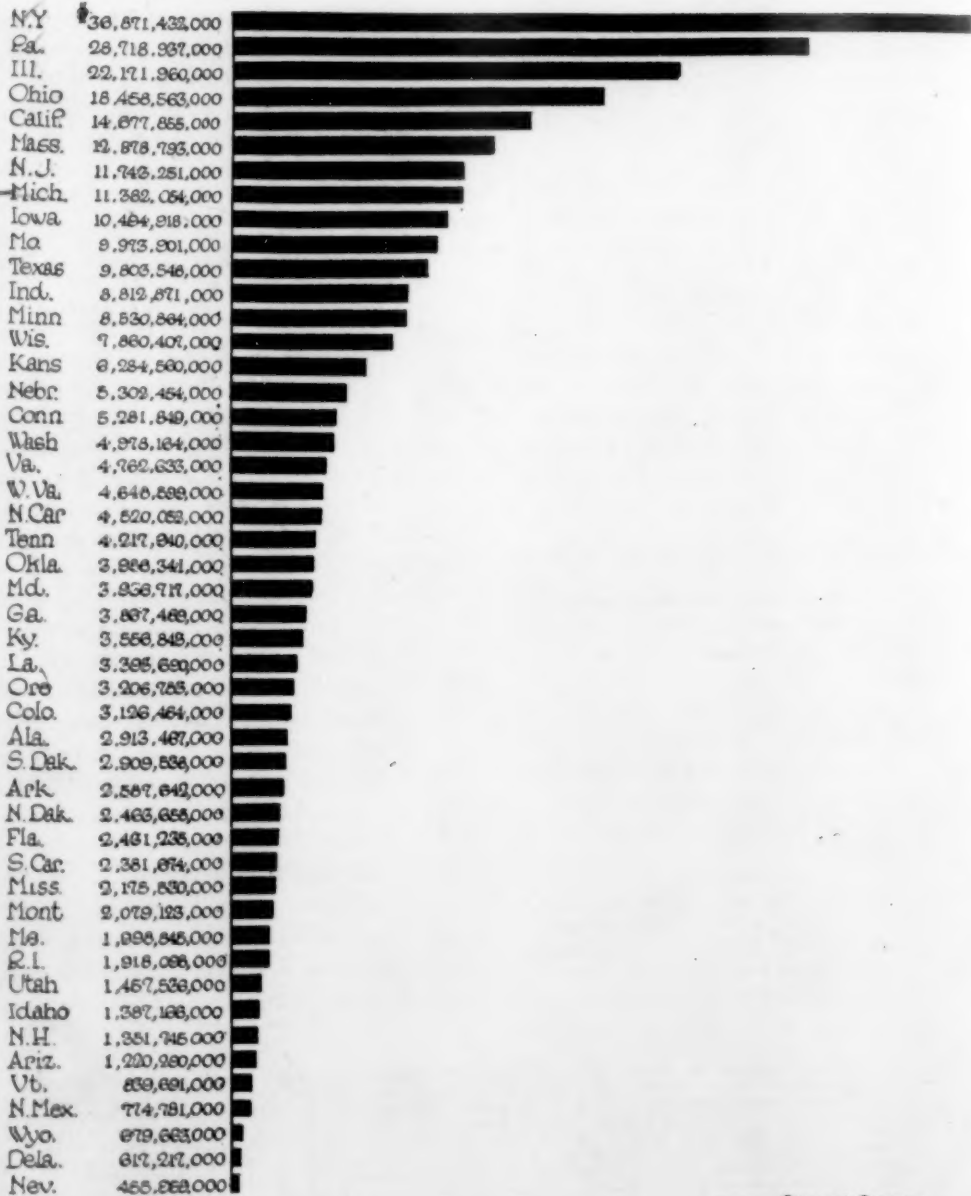
⁴ *Ibid.*, p. 20. It should be added that these private accounts would have to include more than income realized in the form of money. Income such as that realized by the farmer in the form of food consumed on the farm, or housing received by the owner of a house would have to be given a money value and considered in arriving at each individual's income.

⁵ *Ibid.*, p. 28.

⁶ *Ibid.*, p. 43. ". . . for many purposes, estimates of current income may be considered as superior and more reliable."

CHART I

ESTIMATED WEALTH OF THE STATES IN 1922



Research Division
National Education Association

Read chart thus: In 1922 the value of the tangible wealth of New York was \$36,871,432,000; similarly read data for other states

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has been reduced to a minimum.¹ One may judge for himself in this matter by consulting the reports of this Bureau.

Here it is sufficient to quote the Bureau's estimate as to the accuracy of the aggregate figures on income for the country as a whole:

A comparison of the estimated errors in *current* income with the similar figures for *total* income shows how much the *current* income estimates out-class in accuracy those figures on the *total* income. The former estimates for all industries is believed to be less than five percent and perhaps not more than one to two percent in error. The latter estimate may possibly contain an error as large as thirteen percent and an error as large as seven percent is not at all unlikely.²

The estimated accuracy of the figures on income quoted above refer to aggregate income for the nation. The incomes of the various states were not arrived at by applying to each state the methods used in arriving at the national estimate. Neither the resources nor the data necessary for this were available. Accordingly the method described below was adopted:

It consists of first apportioning separately the national totals of the various component parts of the income of the American people to the several states, in accordance with carefully computed indices, and then combining the estimates for the individual items into totals representing the incomes of the people in each state.³

This method doubtless introduces errors affecting individual states. The care with which the method was employed, however, justifies the belief that these errors are too small to substantially modify such conclusions as this study will present based upon the income estimates of the various states.

Table 2 represents the average annual income, 1919 to 1921, both total and current, for each of the forty-eight states. Column 4 of this table shows the percentage that *current* income is of *total* income in each state.⁴ Chart II graphically depicts this relationship for the various states.

In the majority of the states it appears to make little difference in the proportion of the nation's income allotted to a state whether the basis of the allotment is total or current income. For the nation, average annual current income is 91.56 percent of average annual total income. The indices of column 5 of Table 2 allow us to say for thirty-five states that an increase or a decrease in the average current income of six percent or less would bring them into perfect agreement with the ratio of current to total income for the country as a whole, that is, 91.56 percent.

It is without the scope of this study to attempt a complete economic interpretation of why current income is not 91.56 percent of total income in all states, and why in a few cases there is a wide divergence above or below this ratio. Here it will suffice to point out that among the factors that might cause the ratio of current to total income to deviate considerably in a particular state in any one year are:

1. An unusually high or low current income, which in common parlance would be designated "good" or "hard" times.

2. Economic conditions which result in an unusually high or low or even a negative figure under the heading designated "surplus and gains on inventories," the economic concept which expressed in dollars is added to (or subtracted from) current income to give total income.

3. Combinations of these two factors.

Such factors probably entered to disturb the ratio of current to total income in several states. For example, "The effect of the 1921 depression was apparently not felt in all sections of the country with the same degree of severity. The West North Central States seem to have been hit hardest, while the Pacific, New England, and Middle Atlantic States came through with comparatively small losses."⁵ A study of Table B, page 74, will

¹ Leven, Maurice, *Income in the United States*. National Bureau of Economic Research, 1925, p. 2.

² *Ibid.*, p. 36.

³ *Ibid.*, p. 41.

⁴ "Total" is here used in a special sense. Total income is not always more than current income. When the part of income which is added to current income, to determine total income, is a negative quantity, i. e., when the "surplus and gains on inventories accruing to individuals" show a loss in any state for a given year, total income will be less than current income. This accounts for the fact that the percentage that current is of total income in a few cases is greater than 100 in Table 2, column 4.

⁵ Leven, Maurice, *Income in the United States*, p. 136.

reveal what appears to be unusual variations in certain states from the general situation in the country as it concerns income in 1921.

This is, of course, a part of the larger ques-

tion which may legitimately be raised concerning Table 2, namely: Are the averages given for total and current income based upon normal years?

TALBE 2.—ESTIMATED AVERAGE ANNUAL INCOME OF THE STATES, 1919 TO 1921 INCLUSIVE
(Expressed in thousands of dollars)

States	Average annual total income (a)	Average annual current income (b)	Percentage that current income is of total income (c)	Index of percentage of current to total income (d)
1	2	3	4	5
United States.....	\$73,806,095	\$67,577,131	91.56	100.00
Alabama.....	763,980	723,445	94.69	103.42
Arizona.....	267,472	229,209	85.69	93.59
Arkansas.....	564,827	564,426	99.93	109.14
California.....	3,852,951	3,342,206	86.74	94.74
Colorado.....	739,143	666,577	90.18	98.49
Connecticut.....	1,153,131	1,066,910	92.52	101.05
Delaware.....	162,829	154,622	94.96	103.71
Florida.....	480,604	414,802	86.31	94.27
Georgia.....	969,017	986,943	101.85	111.24
Idaho.....	299,992	252,320	84.11	91.86
Illinois.....	5,663,234	5,215,501	92.09	100.58
Indiana.....	1,772,039	1,683,432	95.00	103.76
Iowa.....	1,431,942	1,333,796	93.15	101.74
Kansas.....	1,133,749	1,019,107	89.89	98.18
Kentucky.....	926,281	944,486	101.97	111.37
Louisiana.....	817,869	762,253	93.20	101.79
Maine.....	305,402	460,451	91.11	99.51
Maryland.....	1,108,291	1,025,902	92.57	101.10
Massachusetts.....	3,699,901	3,392,513	91.69	100.14
Michigan.....	2,829,970	2,586,001	91.38	99.80
Minnesota.....	1,624,161	1,354,051	83.37	91.06
Mississippi.....	901,456	495,946	98.90	108.02
Missouri.....	2,050,831	1,941,856	94.69	103.42
Montana.....	279,737	336,162	120.17	131.25
Nebraska.....	834,902	707,772	84.77	92.58
Nevada.....	65,165	69,987	107.40	117.30
New Hampshire.....	314,169	288,256	91.75	100.21
New Jersey.....	2,813,431	2,529,034	89.89	98.18
New Mexico.....	172,880	166,466	96.29	105.17
New York.....	11,230,989	10,240,721	91.18	99.58
North Carolina.....	961,034	906,437	94.32	103.01
North Dakota.....	325,222	289,417	88.99	97.19
Ohio.....	4,245,504	3,972,361	93.57	102.20
Oklahoma.....	1,115,906	998,170	89.45	97.70
Oregon.....	656,200	566,241	86.29	94.24
Pennsylvania.....	6,981,556	6,353,675	91.01	99.40
Rhode Island.....	549,378	503,949	91.73	100.19
South Carolina.....	546,053	559,053	102.38	111.82
South Dakota.....	420,570	333,206	79.23	86.53
Tennessee.....	869,341	830,603	95.54	104.35
Texas.....	2,726,171	2,429,753	89.13	97.35
Utah.....	268,486	247,598	92.22	100.72
Vermont.....	224,540	201,940	89.93	98.22
Virginia.....	1,026,856	948,905	92.41	100.93
Washington.....	1,148,818	1,009,317	87.86	95.96
West Virginia.....	796,571	729,527	91.58	100.02
Wisconsin.....	1,760,653	1,572,949	89.34	97.58
Wyoming.....	152,882	168,877	110.46	120.64

(a) Average annual total income is obtained by averaging the figures of columns 2-4 of Table B, p. 74.

(b) Average annual current income is obtained by averaging the figures of columns 13-15 of Table B, p. 74.

(c) Percentage that current income is of total income is obtained by dividing the figures in col. 3 by the figures in col. 2.

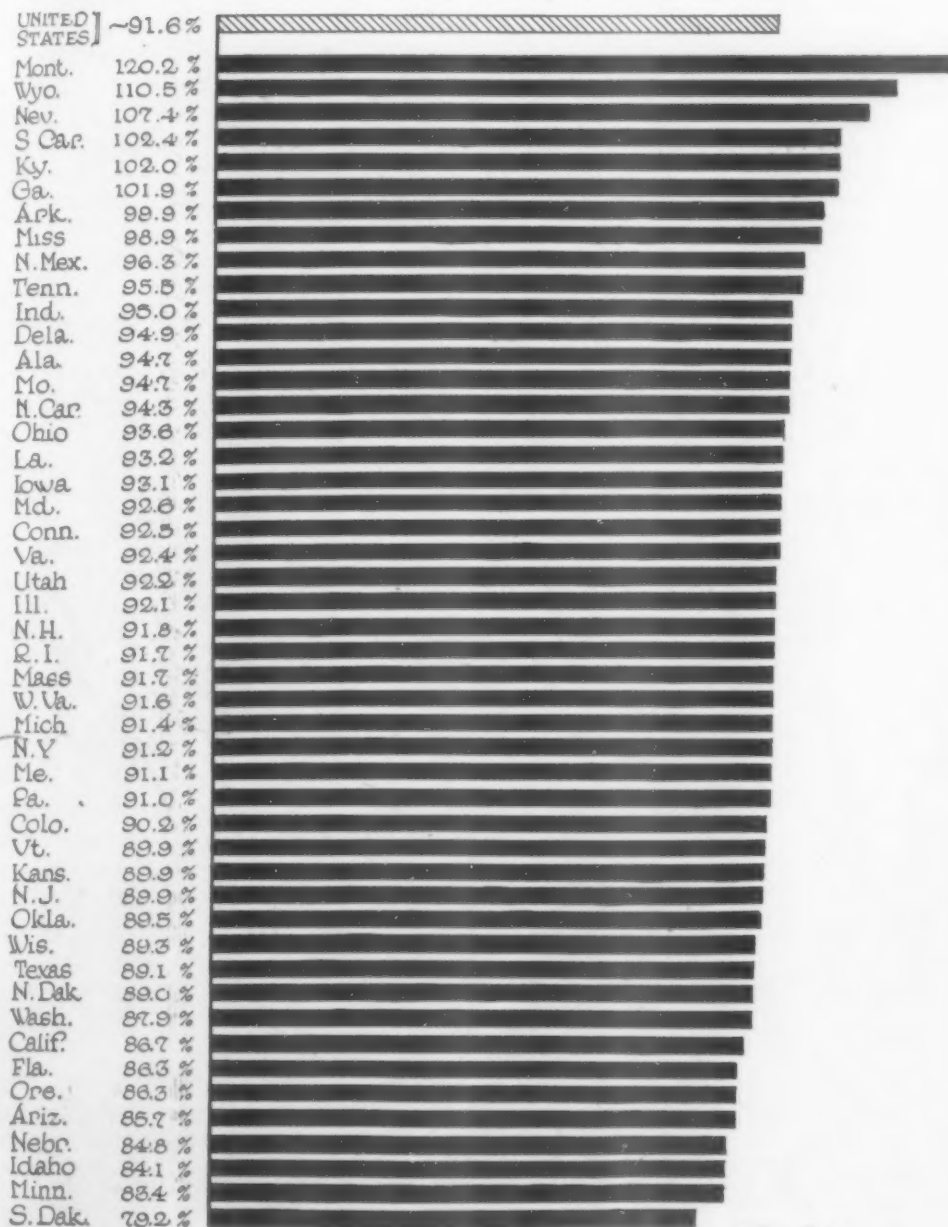
(d) Index of percentage of current income to total income is the result of dividing each figure in col. 4 by 91.56, which makes the index figure for the United States 100; for Alabama 103.42, etc. This means that if the average annual current income of Alabama were decreased 3.42 (103.42 minus 100) percent, there would be a perfect agreement between the ratios of current to total income for Alabama and for the United States as a whole, which is 91.56 percent. The same would be true for Arizona, providing Arizona's average annual current income were increased 6.41 percent (100 minus 93.59).

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CHART II

PERCENTAGE AVERAGE YEARLY *CURRENT* INCOME IS OF AVERAGE YEARLY *TOTAL* INCOME



Research Division
National Education Association

Read chart thus: The average yearly *current* income of Montana is 120.2 percent of its average yearly *total* income. Similarly read data for other states.

This question is answered as follows by the economists of the National Bureau of Economic Research:

No year is a *normal* year for all industries, and, consequently conditions obtaining in any one year can hardly be accepted as being fully descriptive of the position of any state with respect to income. A picture of *normal* conditions may only be had through a study of the data for a series of years. As only three years,—1919, 1920, and 1921,—are considered in this volume, it is necessary that the data presented be considered in the light of the conditions existing in each of the three years . . . We see that for the country as a whole, the period presents almost a complete economic cycle with the peak the latter part of 1919 and the beginning of 1920, and the trough at the end of 1920 and the beginning of 1921.¹

Since these three years embrace almost a complete economic cycle there is some justification for accepting them as representative of what data for a longer period would show. If figures were available for a longer period it is probable, however, that the relative position of some states would be considerably modified since the effect of the 1921 depression was not felt in all sections with the same degree of severity. A comparison of California and South Dakota as to the percentage of the aggregate income for the three-year period realized in each of the years, as given in Table B, page 74, strikingly supports this statement. The following data from this table shows how differently these two states fared in this three-year period:

States	Percentage of income in three-year period 1919 to 1921 realized in:		
	1919	1920	1921
California	29 61	36 26	34 13
South Dakota	44 74	32 25	23 01
United States	32 90	36 34	30 70

In columns 9 to 11 of Table B are given the figures as to "surpluses and gains on inventories" used in distinguishing between current and total income. Some states are credited with a positive income increment under

this item, when total income is concerned, whereas others are credited with a loss.

With the aid of Table B, therefore, one can modify, as he wishes conclusions concerning a state, based upon income figures, having in mind unusual cyclic economic factors that may have affected that state's incomes in the years under consideration. It is probable that when income data for the states are available over a considerable period that it will be necessary to modify considerably, for some states, the indications of the data for the three-year period, 1919 to 1921.

In considering the distribution of the three years' income among the individual years, 1919, 1920, and 1921, it might be argued concerning the West North Central States, for example, that the income figures for 1921 are typical and that those for 1919 and 1920 are unusually high. This supposition appears questionable when it is realized that the per capita income in South Dakota, for example, is lower for 1921 than is the per capita income for the Southern States. Such reliable economic data as exist indicate that this is an unusual situation. A comparison of per capita wealth, for example, which reasonably corresponds with per capita income, fails to support this supposition.²

Providing the cautions suggested in the preceding paragraphs are observed, it is felt that income offers a measure of the economic resources of a state of considerable merit. The National Bureau of Economic Research states:

Income is surely a good, if not the best, indication of economic welfare, and to know the income and the distribution of income in a given section of the country is to be able to judge the approximate position in the scale of living of the bulk of its inhabitants.³

Table 2 gives the estimates of average yearly income, for each of the states, which will be used in future calculations as one of the measures of their comparative economic power. Chart III graphically depicts these estimates for current income.

¹ Leven, Maurice, *Income in the United States*. National Bureau of Economic Research, 1925. p. 47.

² See Table 8, p. 28, *Estimated National Wealth*, Bureau of Census.

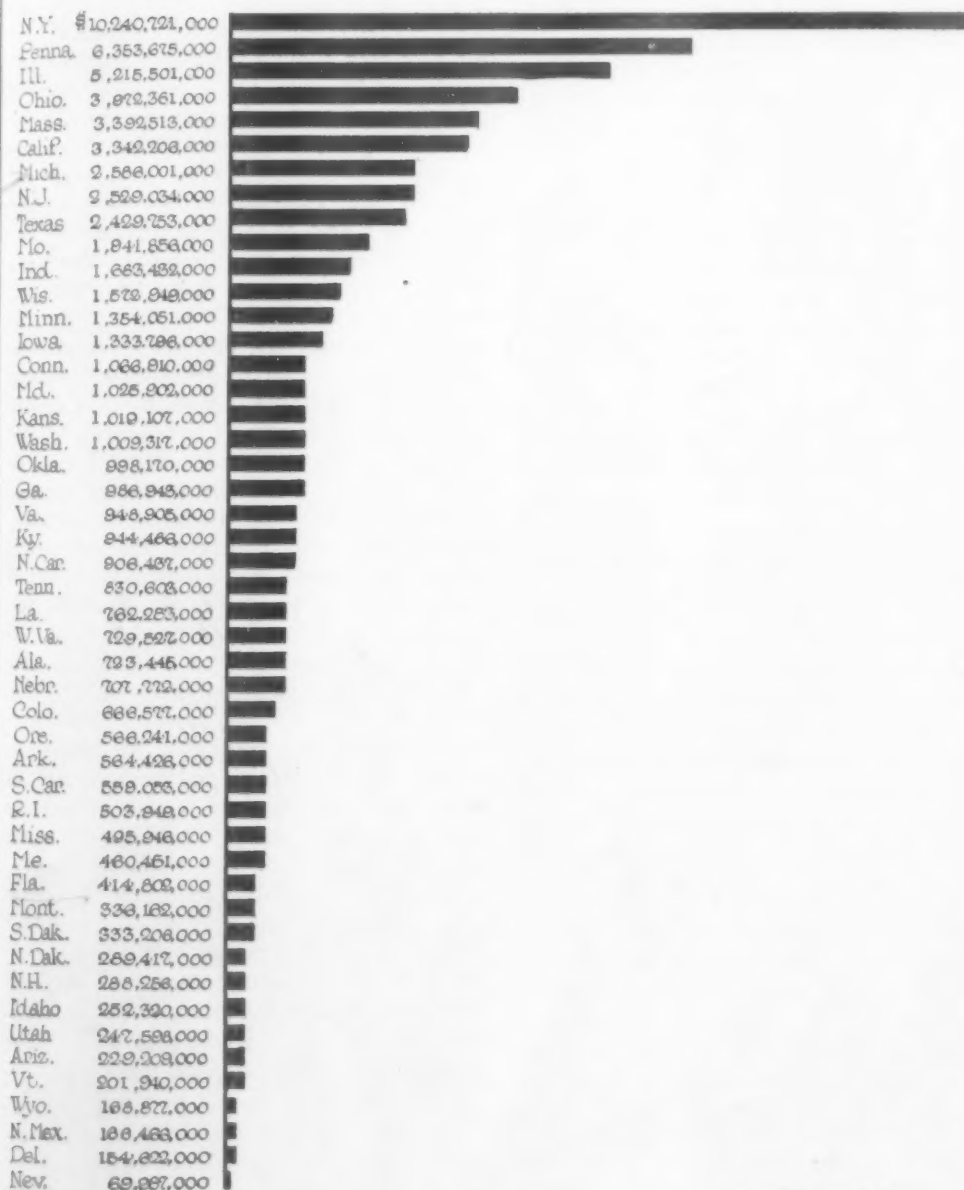
³ Leven, Maurice, *Income in the United States*, National Bureau of Economic Research, 1925. p. 43.

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CHART III

AVERAGE ANNUAL *CURRENT* INCOME of the STATES 1919 to 1921 INCLUSIVE



Research Division
National Education Association

Read chart thus: New York has an average annual *current* income of \$10,240,721,000
Similarly read data for other states.

Comparison of Wealth and Income as Measures of Economic Power

Wealth and income have been suggested as separate indices of the economic power of the states. The question at once suggests itself: What agreement is there between these two indices?

Table 3 offers evidence of agreement between the economic power of a state as indicated by wealth and by income. Considering total income and wealth, the index numbers of column 7, allow us to say for twenty-four of the forty-eight states that an increase or a decrease of 10 per cent or less in the amount of estimated total income would bring them into perfect agreement with the ratio of total income to wealth for the country as a whole, that is, 23.9 percent. The data of column 8 allow similar study of the relation of current income to wealth.

Charts IV and V reveal in graphic form the degree of correlation which exists in the several states between wealth, and current and total income respectively.

One glance at these charts reveals a positive correlation between the wealth of the states and their current and total incomes. The product moment method of correlation gives these coefficients: Wealth with current income .984; wealth with total income .984.

It is without the scope of this study to discuss in detail the factors that must be considered in studying the relationship of income to wealth in the different states.¹ A few of the more important considerations should be mentioned, however. It should be realized that whereas wealth and income are proposed as measures of the same thing, they might both be valid and yet not correlate perfectly. This point may be made clear by an illustration. One individual might own a tract of virgin timber land valued at \$100,000. From this he might be receiving no income whatever. Another man might own no property, but enjoy an income from his salary of \$4,000. One of these men owns large property, but has no income, the other enjoys a substantial income but owns no property. Yet there is

some agreement in their economic resources, for the man who owned the timber land might sell it for \$100,000, and invest this sum in four percent bonds in which case he would have an income of \$4,000—the same as the salaried man. This is, of course, an extreme case, advanced only to illumine the fact that even though we might expect some correlation between the figures on wealth and income given for the states in the preceding sections, they would not necessarily agree exactly.

We would, however, expect some agreement. In a unit as large as a state the discrepancies between wealth and income that are frequent when individuals are concerned tend to be leveled out. In so far as the economic law operates, that the value of real estate is a reflection of its income yielding possibilities, we would expect close agreement between aggregate wealth and income. This same law works to some extent in determining the value of all forms of property. Consequently, whereas some disagreement between the two indices of economic power, wealth and income, might occur without inferring a lack of reliability on the part of either or both, wide discrepancies between the two, if unexplained, might raise a serious question as to the accuracy of the estimates upon which they are based.

One other factor must also be considered in comparing the wealth and income credited to a state. Whereas the wealth of a state concerns property located within that state, without reference to the residence of the owners of this property, the income of a state is a summation of the incomes of the people living within that state without reference to where those incomes arise. Wealth is credited to the state according to the principle of situs or location, income according to the principle of domicile or residence.

As the National Bureau of Economic Research points out, incomes from wages, salaries and small business enterprises are usually earned in the same state as that in which the individual lives. Therefore, such income

¹ A brief but illuminating discussion of the meaning of the terms income and wealth will be found in the following reference: King, Willford L. *Income and Wealth*. *The American Economic Review*, September, 1925. pp. 457-474.

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tends to fall within the same state as wealth connected with this income. On the other hand, in the case of:

income from invested capital, the place of production of the income is likely not to correspond with that where the recipients reside. The bulk of industry, with the exception of agri-

TABLE 3.—RELATION OF AVERAGE ANNUAL TOTAL INCOME AND AVERAGE ANNUAL CURRENT INCOME TO WEALTH

(Wealth and income expressed in thousands of dollars)

States	Wealth (a)	Average annual total income 1919 to 1921 (b)	Average annual current income 1919 to 1921 (c)	Percent that average total income is of wealth (d)	Percent that average current income is of wealth (e)	Index of percent that average total income is of wealth (f)	Index of percent that average current income is of wealth (g)
1	2	3	4	5	6	7	8
United States.....	\$310,042,785	\$73,806,095	\$67,577,131	23.9	21.8	100.0	100.0
Alabama.....	2,913,467	763,989	723,445	26.2	24.8	109.6	113.8
Arizona.....	1,220,290	267,472	229,209	21.9	18.8	91.6	86.2
Arkansas.....	2,587,642	564,827	564,426	21.8	21.8	91.2	100.0
California.....	14,677,855	3,852,951	3,342,206	26.3	22.8	110.0	104.6
Colorado.....	3,126,464	739,143	666,577	23.6	21.3	98.7	97.7
Connecticut.....	5,281,849	1,153,131	1,066,910	21.8	20.2	91.2	92.7
Delaware.....	617,217	162,829	154,622	26.4	25.1	110.5	115.1
Florida.....	2,431,235	480,604	414,802	19.8	17.1	82.8	78.4
Georgia.....	3,867,489	969,017	986,943	25.1	25.5	105.0	117.0
Idaho.....	1,387,166	299,992	252,320	21.6	18.2	90.4	83.5
Illinois.....	22,171,960	5,663,234	5,215,501	25.5	23.5	106.7	107.8
Indiana.....	8,812,871	1,772,039	1,683,432	20.1	19.1	84.1	87.6
Iowa.....	10,494,918	1,431,942	1,333,796	13.6	12.7	56.9	58.3
Kansas.....	6,234,560	1,133,749	1,019,107	18.2	16.3	76.2	74.8
Kentucky.....	3,556,843	926,281	944,486	26.0	26.6	108.8	123.0
Louisiana.....	3,393,690	817,869	762,253	24.1	22.5	100.8	103.2
Maine.....	1,998,845	505,402	460,451	25.3	23.0	105.9	105.5
Maryland.....	3,936,716	1,108,291	1,025,902	28.2	26.1	118.0	119.7
Massachusetts.....	12,878,793	3,699,901	3,392,513	28.7	26.3	120.1	120.6
Michigan.....	11,382,054	2,829,970	2,586,001	24.9	22.7	104.2	104.1
Minnesota.....	8,530,864	1,624,161	1,354,051	19.0	15.9	76.5	72.9
Mississippi.....	2,175,531	501,456	495,946	23.0	22.8	96.2	104.6
Missouri.....	9,973,901	2,050,831	1,941,856	20.6	19.5	86.2	89.5
Montana.....	2,079,125	279,737	336,162	13.5	16.2	56.5	74.3
Nebraska.....	5,302,454	834,902	707,772	15.7	13.3	65.7	61.0
Nevada.....	455,959	65,165	69,987	14.3	15.4	59.8	70.6
New Hampshire.....	1,351,745	314,169	288,256	23.2	21.3	97.1	97.7
New Jersey.....	11,743,251	2,813,431	2,529,034	24.0	21.5	100.4	98.6
New Mexico.....	774,781	172,880	166,466	22.3	21.5	93.3	98.6
New York.....	36,871,432	11,230,989	10,240,721	30.5	27.8	127.6	127.5
North Carolina.....	4,520,052	961,034	906,437	21.3	20.1	89.1	92.2
North Dakota.....	2,463,653	325,222	289,417	13.2	11.7	55.2	53.7
Ohio.....	18,458,563	4,245,504	3,972,361	23.0	21.5	96.2	98.6
Oklahoma.....	3,986,341	1,115,906	998,170	28.0	25.0	117.2	114.7
Oregon.....	3,206,783	656,200	566,241	20.5	17.7	85.8	81.2
Pennsylvania.....	28,718,937	6,981,556	6,353,675	24.3	22.1	101.7	101.4
Rhode Island.....	1,918,098	549,378	503,949	28.6	26.3	119.7	120.6
South Carolina.....	2,381,674	546,053	559,053	22.9	23.5	95.8	107.8
South Dakota.....	2,909,538	420,570	333,206	14.5	11.5	60.7	52.8
Tennessee.....	4,217,940	869,341	830,603	20.6	19.7	86.2	90.4
Texas.....	9,803,548	2,726,171	2,429,753	27.8	24.8	116.3	113.8
Utah.....	1,457,536	268,486	247,598	18.4	17.0	77.0	78.0
Vermont.....	839,691	224,540	201,940	26.7	24.1	111.7	110.6
Virginia.....	4,762,633	1,026,856	948,905	21.6	19.9	90.4	91.3
Washington.....	4,978,164	1,148,818	1,009,317	23.1	20.3	96.7	93.1
West Virginia.....	4,648,599	796,571	729,527	17.1	15.7	71.5	72.0
Wisconsin.....	7,860,407	1,760,653	1,572,949	22.4	20.0	93.7	91.7
Wyoming.....	679,663	152,882	168,877	22.5	24.8	94.1	113.8

(a) These figures are taken from columns 2 and 4 of Table 1.

(b) and (c) These data are taken from columns 2 and 3 of Table 2.

(d) Figures in column 5 are derived by dividing the figures in column 3 by those in column 2.

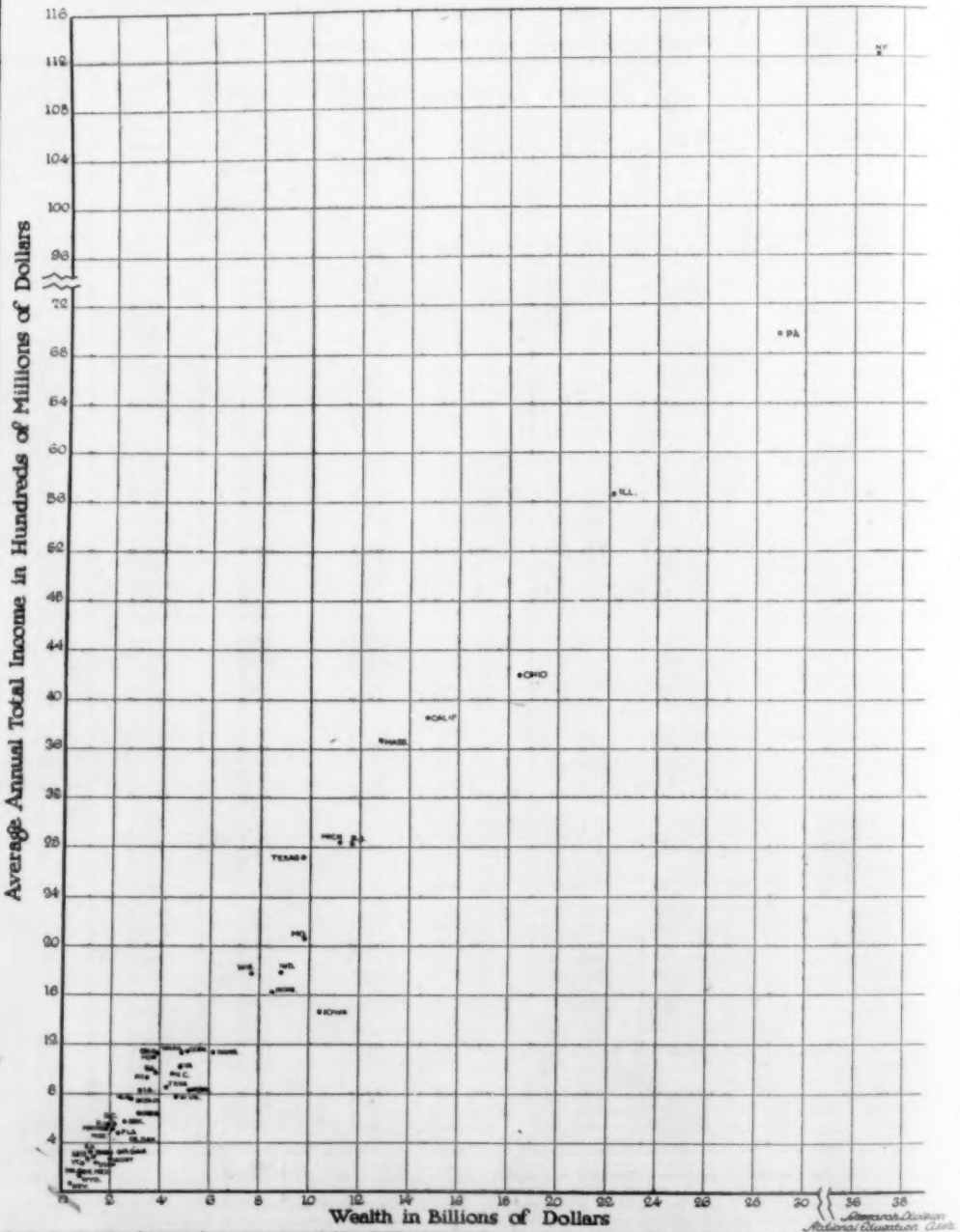
(e) Figures in column 6 are derived by dividing the figures in column 4 by those in column 3.

(f) These figures result from dividing every figure in column 5 by 23.9, which makes the index number for the United States 100.0.

(g) These figures result from dividing every figure in column 6 by 21.8, which makes the index number for the United States 100.0.

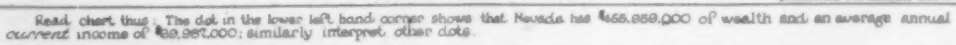
CHART IV

CORRELATION OF WEALTH & ANNUAL TOTAL INCOME BY STATES



Read chart thus: The dot in the lower left hand corner shows that Nevada has \$455,000,000 of wealth and an average annual total income of \$66,125,000; similarly interpret other dots

CORRELATION OF WEALTH & ANNUAL *CURRENT* INCOME BY STATES



ABILITY TO SUPPORT EDUCATION

culture, is conducted by corporations whose securities have a wide distribution. The mines of Arizona may be owned by stockholders in New York; hence, of the total income of the Arizona mines, only about 60 to 70 percent is probably disbursed to the residents of the State of Arizona,

i. e., the part that goes to wage and salary earners. The same is true to a lesser degree of ownership of other property. About one-third of the farm land in the country is owned by non-farmers; and it is conceivable that the owners of land in Iowa reside in Illinois, and the owners of land located

TABLE 4.—RATIO OF INCOME TO WEALTH BY STATES

States	Percent that average annual total income is of wealth	Index of percent that average annual total income is of wealth	States	Percent that average annual current income is of wealth	Index of percent that average annual current income is of wealth
1	2	3	4	5	6
United States.....	23.9	100.0	United States.....	21.8	100.0
States where ratio of average annual total income to wealth is high:			States where ratio of average annual current income to wealth is high:		
New York.....	30.5	127.6	New York.....	27.8	127.5
Massachusetts.....	28.7	120.1	Kentucky.....	26.6	122.0
Rhode Island.....	28.6	119.7	Massachusetts.....	26.3	120.6
Maryland.....	28.2	118.0	Rhode Island.....	26.3	120.6
Oklahoma.....	28.0	117.2	Maryland.....	26.1	119.7
Texas.....	27.8	116.3	Georgia.....	25.5	117.0
Vermont.....	26.7	111.7	Delaware.....	25.1	115.1
Delaware.....	26.4	110.5	Oklahoma.....	25.0	114.7
California.....	26.3	110.0	Wyoming.....	24.8	113.8
Alabama.....	26.2	109.6	Alabama.....	24.8	113.8
Kentucky.....	26.0	108.8	Texas.....	24.8	113.8
Illinois.....	25.5	108.7	Vermont.....	24.1	110.6
Maine.....	25.3	105.9	Illinois.....	23.5	107.8
Georgia.....	25.1	105.0	South Carolina.....	23.5	107.8
Michigan.....	24.9	104.2	Maine.....	23.0	105.5
Pennsylvania.....	24.3	101.7	California.....	22.8	104.6
Louisiana.....	24.1	100.8	Mississippi.....	22.8	104.6
New Jersey.....	24.0	100.4	Michigan.....	22.7	104.1
States where ratio of average annual total income to wealth is low:			Louisiana.....	22.5	103.2
Colorado.....	23.6	98.7	Pennsylvania.....	22.1	101.4
New Hampshire.....	23.2	97.1	Arkansas.....	21.8	100.0
Washington.....	23.1	96.7	States where ratio of average annual current income to wealth is low:		
Ohio.....	23.0	96.2	Ohio.....	21.5	98.6
Mississippi.....	23.0	96.2	New Mexico.....	21.5	98.6
South Carolina.....	22.9	95.8	New Jersey.....	21.5	98.6
Wyoming.....	22.5	94.1	New Hampshire.....	21.3	97.7
Wisconsin.....	22.4	93.7	Colorado.....	21.3	97.7
New Mexico.....	22.3	93.3	Washington.....	20.3	93.1
Arizona.....	21.9	91.6	Connecticut.....	20.2	92.7
Connecticut.....	21.8	91.2	North Carolina.....	20.1	92.2
Arkansas.....	21.9	91.2	Wisconsin.....	20.0	91.7
Virginia.....	21.6	90.4	Virginia.....	19.9	91.3
Idaho.....	21.6	90.4	Tennessee.....	19.7	90.4
North Carolina.....	21.3	89.1	Missouri.....	19.5	89.5
Tennessee.....	20.6	86.2	Indiana.....	19.1	87.6
Missouri.....	20.6	86.2	Arizona.....	18.8	86.2
Oregon.....	20.5	85.8	Idaho.....	18.2	83.5
Indiana.....	20.1	84.1	Oregon.....	17.7	81.2
Florida.....	19.8	82.8	Florida.....	17.1	78.4
Minnesota.....	19.0	79.5	Utah.....	17.0	78.0
Utah.....	18.4	77.0	Kansas.....	16.3	74.8
Kansas.....	18.2	76.2	Montana.....	16.2	74.3
West Virginia.....	17.1	71.5	Minnesota.....	15.9	72.9
Nebraska.....	15.7	65.7	West Virginia.....	15.7	72.0
South Dakota.....	14.5	60.7	Nevada.....	15.4	70.6
Nevada.....	14.3	59.8	Nebraska.....	13.3	61.0
Iowa.....	13.6	56.9	Iowa.....	12.7	55.3
Montana.....	13.5	56.5	North Dakota.....	11.7	53.7
North Dakota.....	13.2	55.2	South Dakota.....	11.5	52.8

The figures in this table represent a rearrangement of some of the data given in Table 3. Read table thus: The average annual total income of New York is 30.5 percent of its tangible wealth. If the ratio of average annual total income to wealth in the United States is given the value 100, then this ratio for New York State is 127.6. If the average annual total income of New York was 27.6 percent less than is actually the case, then the ratio of income to wealth in this state would be the same as in the United States as a whole. Similarly read data for other states as to ratios of total and of current income to wealth.

in Illinois reside in Iowa. Evidently to trace the income of such land among the states would be next to impossible.¹

In the light of these considerations it is interesting to study Table 4.

It is predominately in the agricultural and rural states that the ratio of income to wealth is below the average; whereas, the industrial states are conspicuous among those in which the ratio of income to wealth is relatively high. Chart VI graphically verifies this statement.

How much the ratios of income to wealth for the states, given in Table 4, are affected by the nature of their economic organization, by the effect of periodic, cyclical changes in the economic situation, particularly as they bear upon different states with unequal force, or by other unmeasured influences, can only be conjectured from facts now available. Data that have some bearing on this question have been presented. Their interpretation must be left to the individual.

A comparison of the wealth and income estimates for the various states, however, seems to justify increased confidence as to the reasonable accuracy of both, and as to their value as indications of economic power.

A Combination of Wealth and Income as a Measure of Economic Power

From a consideration of wealth and income as independent measures of economic resources, the question arises as to whether some combination of the two measures would not result in a more reliable index than either of the two alone. The Model Plan of Taxation proposed by the National Tax Association involves the taxation of real estate, which constitutes more than half of aggregate wealth, as well as an income tax. The tax on realty would be levied according to the principle of situs and the income tax according to domicile. A combination of wealth and income as a measure of economic power of a state would be in accordance with these proposals.

The data given in Table 5 were used in an attempt to arrive at a combination of wealth and income as an index of economic power. The difficulties encountered in such an attempt circulate about the determination of the weight to be assigned to income as compared with wealth. The factors involved are so complicated and the data bearing upon the point are so meager that it was out of the question to attempt a wholly scientific determination of this weight.²

The data of Table 5 reveal, however, that it makes little difference in determining the rank of a state in economic resources whether as much as one-third or as little as one-twentieth of wealth is combined with income. The deviations between the ranks obtained by combining income with various percentages of wealth are given in Tables 6 and 7. If data were available to determine the desirable percentages of wealth to combine with income in obtaining valid comparable measures of the states' economic power, it is likely that these percentages would fall somewhere between one-third and one-twentieth. It was, therefore, arbitrarily decided to use the following formula as a basis for combining wealth and income in an index of economic power:

Index of economic resources equals income plus one-tenth the value of wealth.

This assigns to a dollar of wealth one-tenth the value of a dollar of income. Thus a state with twenty billions of wealth and one billion of income would be rated as having the same economic power as a state with ten billions of wealth and two billions of income.

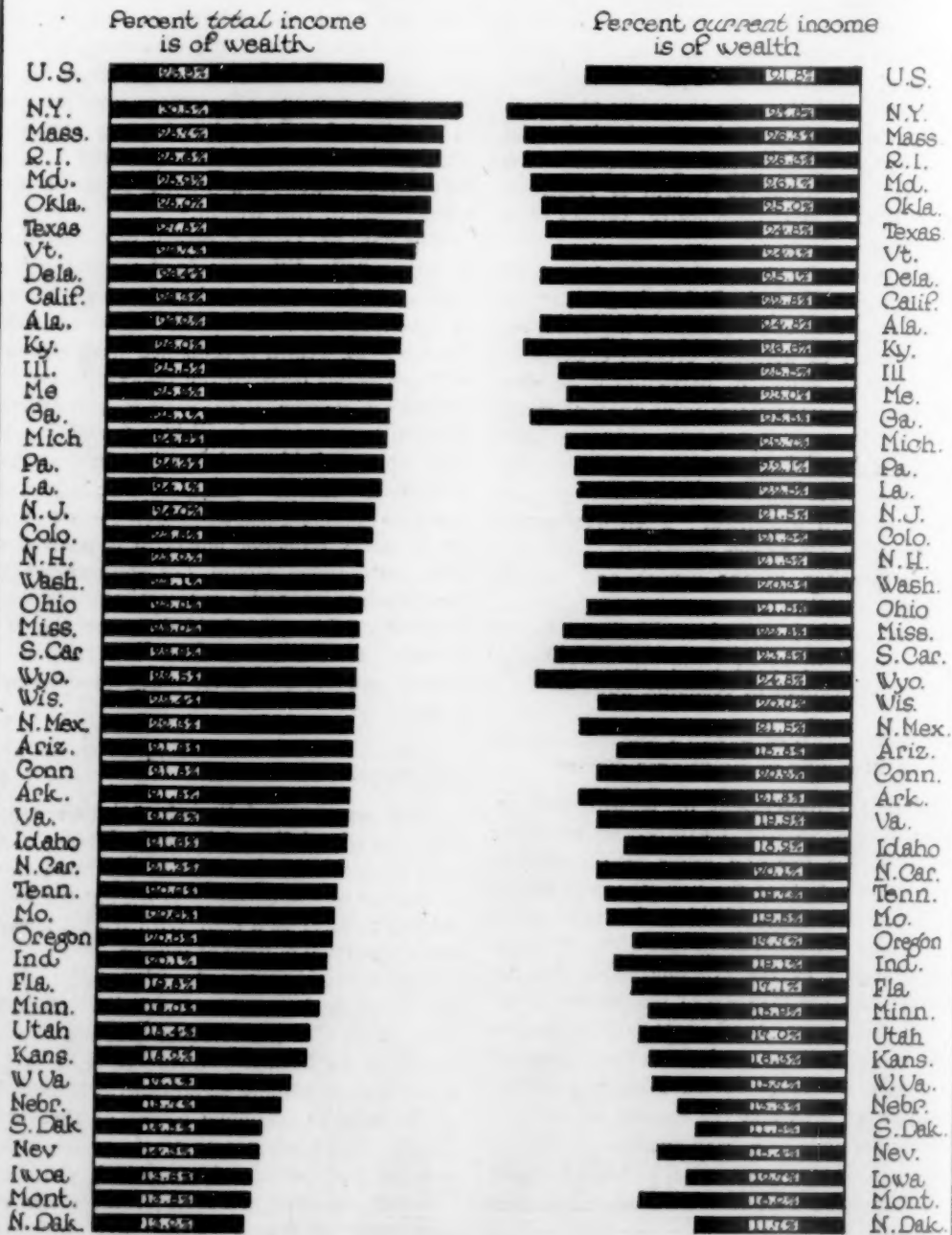
This index is presented with a full realization of the inadequacy from a strictly scientific point of view of the evidence that can be presented in its behalf. Nevertheless, it is believed that it is more significant as a measure of the relative economic power of the states than is wealth or income alone, or any other measure that can now be proposed. In chart VII the economic resources of the states are graphically depicted, using the suggested

¹ Leven, Maurice. *Income in the United States*, pp. 40 and 41.

² Strayer and Haig. *The Financing of Education in the State of New York*. See pp. 171 and 172 for a statement of the factors involved in a similar problem.

CHART VI

PERCENTAGE AVERAGE YEARLY INCOME IS OF WEALTH



Read chart thus: in New York the average yearly total income is 30.8 percent of its wealth; the average yearly current income for the same state is 29.8 percent. Similarly read data for other states.

Research Division
National Education Association

TABLE 5.—WEALTH, INCOME, AND INDEX OF ECONOMIC RESOURCES FOR THE SEVERAL STATES
(Expressed in thousands of dollars)

TABLE 5.—WEALTH, INCOME, AND INDEX OF ECONOMIC RESOURCES FOR THE SEVERAL STATES
(Expressed in thousands of dollars)

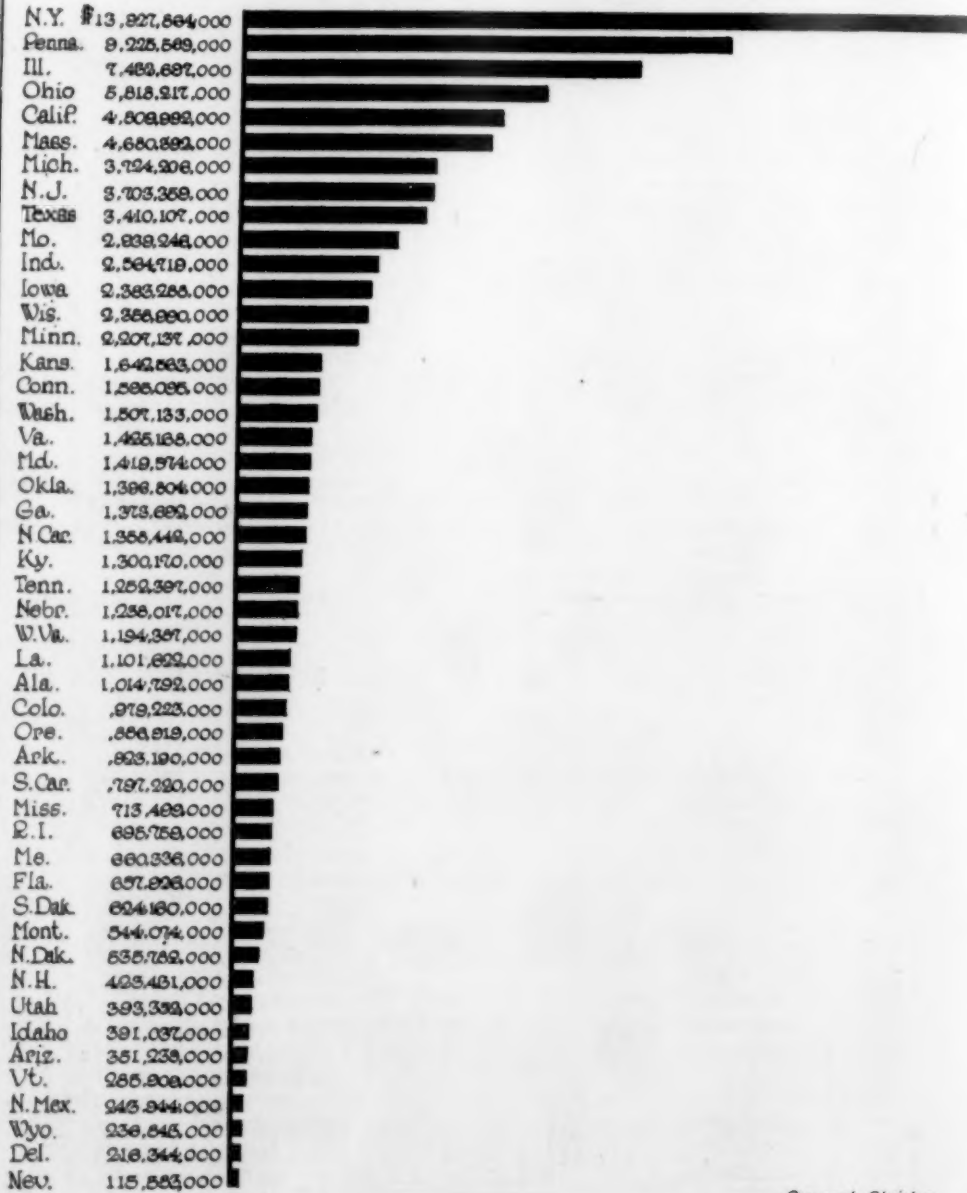
State	Average annual total income 1919-1921 plus 1922 (a)	1/10 of wealth 1922 (b)	1/10 of wealth 1921 (c)	1/10 of wealth 1920 (d)	1/10 of wealth 1919 (e)	Average annual current income 1919-1921 plus 1922 (f)	1/10 of wealth 1922 (g)	1/10 of wealth 1921 (h)	1/10 of wealth 1920 (i)	1/10 of wealth 1919 (j)
United States	373,826,000	310,544,708	317,135,450	317,135,450	317,135,450	367,877,131	310,544,708	317,135,450	317,135,450	317,135,450
Alabama	765,389	2,512,467	1,736,148	29	1,055,356	722,445	1,694,601	29	1,206,138	846,119
Alaska	1,074,205	1,074,205	1,074,205	43	1,074,205	1,074,205	1,074,205	43	1,074,205	1,074,205
Arizona	564,227	1,811,550	1,357,621	25	1,357,621	564,227	1,811,550	25	1,357,621	564,227
California	2,682,761	19,577,680	8,740,540	31	8,740,540	3,452,505	1,824,824	5	6,277,777	4,869,992
Colorado	739,145	3,126,464	1,791,296	26	1,621,999	1,709,732	1,709,732	29	1,291,870	825,907
Connecticut	1,152,131	2,831,640	2,813,919	16	1,631,315	1,564,012	2,813,919	16	1,564,012	1,564,012
Delaware	162,689	828,540	388,782	45	388,782	162,689	828,540	45	388,782	162,689
Florida	680,604	2,651,236	1,871,014	24	725,753	514,832	1,225,214	24	931,049	687,858
Georgia	3,647,409	2,486,160	1,742,215	22	1,122,392	984,943	2,276,107	25	1,707,481	1,370,517
Idaho	1,387,164	712,201	435,709	41	359,331	235,300	714,709	42	591,037	521,579
Illinois	5,645,254	22,171,840	10,097,425	3	7,890,450	5,215,001	12,404,154	3	9,649,935	6,754,036
Indiana	1,772,089	8,812,871	4,709,648	12	2,655,313	1,653,432	4,821,107	11	3,446,006	2,564,719
Iowa	1,431,944	10,494,818	4,800,249	11	2,481,542	1,353,796	4,821,107	11	3,446,006	2,564,719
Kansas	1,124,840	2,124,840	1,124,840	15	1,124,840	1,124,840	2,124,840	15	1,124,840	1,124,840
Kentucky	2,059,281	2,059,281	2,059,281	25	1,281,805	944,986	2,059,281	25	1,281,805	944,986
Louisiana	817,449	3,282,680	1,949,099	27	1,107,128	760,253	1,893,483	27	1,440,991	1,021,622
Maine	1,998,848	1,998,848	1,998,848	37	708,287	440,451	1,126,773	37	860,220	660,356
Massachusetts	3,000,717	2,326,717	1,600,717	20	1,600,717	1,600,717	2,326,717	20	1,600,717	1,600,717
Michigan	2,829,970	11,582,084	6,432,886	6	2,969,179	2,566,001	6,280,019	6	4,842,412	3,784,206
Minnesota	1,824,141	8,520,864	4,487,782	13	2,500,254	1,250,081	4,197,672	13	3,060,224	2,207,137
Mississippi	2,277,880	2,277,880	2,277,880	16	1,001,938	760,253	1,126,773	16	1,415,574	1,021,622
Missouri	2,779,727	5,075,115	2,779,727	39	487,449	353,162	1,029,250	39	781,957	564,074
Montana	834,932	2,602,464	2,602,464	19	1,890,293	707,772	2,478,257	19	1,786,263	1,236,517
Nebraska	68,148	452,909	217,151	48	110,741	69,045	231,077	48	131,178	97,003
Nevada	315,165	1,301,746	744,741	40	444,741	280,284	728,830	40	850,609	627,431
New Hampshire	2,813,431	11,742,231	6,727,640	9	3,897,746	2,529,024	6,442,451	9	4,877,694	3,705,359
New Jersey	1,172,000	774,791	437,160	46	230,268	166,466	434,726	46	321,422	242,944
New Mexico	11,000,000	26,871,466	22,551,466	1	14,919,132	10,840,721	22,551,466	1	17,610,097	13,387,864
New York	901,024	4,520,062	2,407,718	20	1,840,246	904,437	2,407,718	20	1,810,448	1,368,542
North Carolina	2,285,688	2,443,668	1,744,440	28	877,587	569,417	1,110,438	28	782,148	552,782
Ohio	4,242,504	10,446,545	10,398,260	4	6,079,260	3,973,417	10,129,215	4	8,614,217	6,486,074
Oklahoma	1,117,706	2,801,361	1,464,460	21	1,014,540	798,170	1,014,540	21	1,396,804	1,014,540
Oregon	2,059,281	2,059,281	2,059,281	30	979,898	616,099	1,328,139	30	1,097,258	861,919
Pennsylvania	6,981,086	28,714,337	14,256,236	8	9,002,245	6,817,203	18,969,484	8	12,097,662	9,221,549
Rhode Island	1,214,098	1,214,098	1,214,098	36	761,180	504,369	1,126,773	36	897,559	694,759
South Carolina	2,277,880	2,277,880	2,277,880	28	1,014,540	798,170	1,014,540	28	1,396,804	1,014,540
South Dakota	1,200,411	1,200,411	1,200,411	30	979,898	616,099	1,328,139	30	1,097,258	861,919
Tennessee	669,341	4,217,940	2,278,221	24	1,712,019	1,000,000	2,278,221	24	1,678,191	1,252,397
Texas	2,795,171	9,008,448	4,686,881	9	3,706,522	2,427,753	6,697,601	9	4,390,442	3,215,107
Vermont	358,440	854,471	454,471	64	266,526	231,940	481,837	64	309,277	230,172
Virginia	1,026,864	2,014,420	1,379,389	14	3,009,119	1,948,505	2,536,449	14	1,901,421	1,401,421
Washington	1,146,019	4,979,144	2,800,806	17	1,844,461	1,009,317	2,668,708	17	2,004,050	1,507,135
West Virginia	990,371	4,646,899	2,366,104	53	1,900,051	799,597	2,279,000	53	1,609,347	1,154,297
Wisconsin	1,740,423	4,360,789	2,352,754	12	2,564,094	1,576,949	4,135,084	12	3,145,320	2,360,990
Wyoming	132,882	679,653	379,653	65	220,948	168,877	396,421	65	304,810	230,842

(a) Data of columns 2 and 13 are taken from Table 2.
(b) Data of column 3 are taken from Table 1.
(c) Figures of column 4 are obtained by adding the income of a state as given in column 2 to one-third of its wealth as given in column 3. Similarly for column 6, etc.

CHART VII

ECONOMIC RESOURCES of the STATES

(As indicated by index of economic resources ~ average yearly current income plus one-tenth tangible wealth ~)



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National Education Assn.

Read chart thus: The index of economic resources (average annual current income 1919 to 1921, plus one-tenth the value of tangible wealth 1922) for New York was \$13,927,864,000. Similarly read data for other states.

formula with wealth and current income for each of the states.

The three indications of economic resources, wealth, income, and a combination of the two, described in the preceding paragraphs are suggested as bases for comparing the

economic power of the states of the union. Before we can employ them in determining the comparative ability of the states to support education, however, an estimate must be made of the size of the educational obligations of the various states.

TABLE 6.—DEVIATIONS BETWEEN STATE RANKS WHEN COMBINING AVERAGE ANNUAL TOTAL INCOME WITH VARIOUS PERCENTAGES OF WEALTH

Deviations in rank	Total average annual income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{4}$ of wealth	Total average annual income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{10}$ of wealth	Total average annual income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{40}$ of wealth	Total average annual income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{100}$ of wealth	Total average annual income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{400}$ of wealth	Total average annual income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{1000}$ of wealth
1	2	3	4	5	6	7
0	35	29	26	33	28	36
1	8	10	9	12	11	8
2	5	4	4	1	5	4
3	.....	4	7	2	3	.....
4	.....	1	.....	.....	1	.....
5	.....	.....	2	.....	.....	.....
6	.....	.....	.....	.....	.....	.....
Median....	0	0	0	0	0	0
Middle 50%	0-1	0-1	0-2	0-1	0-1	0

Read Table 6 as follows: When the ranks of the states as given in columns 5 and 7 of Table 5 are compared, 35 states have the same rank in both columns, the ranks of 8 states are changed 1 place, etc. Similarly read the other columns.

TABLE 7.—DEVIATIONS BETWEEN STATE RANKS WHEN COMBINING AVERAGE ANNUAL CURRENT INCOME WITH VARIOUS PERCENTAGES OF WEALTH

Deviations in rank	Average annual current income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{4}$ of wealth	Average annual current income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{10}$ of wealth	Average annual current income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{40}$ of wealth	Average annual current income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{100}$ of wealth	Average annual current income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{400}$ of wealth	Average annual current income plus $\frac{1}{2}$ of wealth and plus $\frac{1}{1000}$ of wealth
1	2	3	4	5	6	7
0	33	25	20	34	26	39
1	11	11	13	7	13	8
2	3	7	8	4	6	1
3	1	3	5	3	3	.....
4	.....	1	1	.....	.....	.....
5	.....	.....	.....	.....	.....	.....
6	.....	1	1	.....	.....	.....
Median....	0	0	1	0	0	0
Middle 50%	0-1	0-1	0-2	0-1	0-1	0

Read Table 7 as follows: When the rank of the states as given in column 14 and 16 of Table 5 are compared, 33 states have the same rank in both columns, the ranks of 11 states are changed 1 place, etc. Similarly read the other columns.

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² See ?

CHAPTER II

The Educational Obligations of the States

The number of children aged six to thirteen years inclusive is suggested in this chapter as a measure of the size of the educational task faced by a state. Some other division of the population might have been used. Indeed, the total population of each state might have been suggested. This presumes, however, that formal educational facilities involving public financial outlay are to be maintained by a state for all or at least a large part of the population of all ages. In such a situation the total population might be accepted as a measure of educational load. Such a conception of education is, however, not as yet accepted in general practice.

Therefore, total population would be acceptable as an indication of the educational load faced by each state only if it apportioned to each state a part of the total educational load of the nation similar to one based upon some less extensive part of the population, which it is generally agreed should be given formal educational training.

Various Sections of Population as Measures of Educational Load

In Table 8 have been assembled the data showing the effect of selecting various sections of the population of the states as a measure of the educational load to be borne. These data reveal that the percentage of the population found in a particular age group varies widely in different states. Column 10 shows that the age group six to thirteen includes less than thirteen percent of the population of California, whereas the same age group includes over twenty-one percent of Alabama's population. Such a variation is significant in deciding between total population and the population found in a particular age group as an indication of educational load to be provided for. Its significance

is more fully revealed in column 13 of Table 8. If the educational load credited to Alabama on the basis of the total population found in Alabama is given the value 100, the educational load credited to this state on the basis of the percentage of the children found in the six to thirteen age group is represented by the value 126. California's educational load if given a value 100 on the basis of general population drops to 76 on the basis of children six to thirteen.

In short, the proportion of the nation's educational load credited to Alabama increases 26 percent, when age group six to thirteen is substituted for general population as a measure of educational load, while California's decreases 24 percent. The significance of these facts can be more fully realized by consulting the figures in columns 2 and 3 of Table 8. Although Alabama's total population is but 2,348,174 as compared with California's 3,426,861, Alabama has 494,701 children six to thirteen as compared with California's 434,444.

Chart VIII graphically depicts the variations of the states as to the percentage of population aged six to thirteen. In South Carolina 21.7 percent of the population is of these ages, while in California the percent is 12.7. The map on page 26 shows that wide variations in the ratio of child to adult population is a sectional as well as a state problem.

Up to the present time too little attention has been given to the importance of varying percentages of children in the population of different states.¹ Some states have decided advantages over others in providing educational opportunities because they have relatively few children. For example, California expended \$93,534,315 for public schools in 1922.² If the ratio of the population aged

¹ As this study was being prepared an investigation by Clark appeared that clearly recognizes the significance of this factor. This study is discussed at greater length in Chapter V, see reference at foot of page 61.

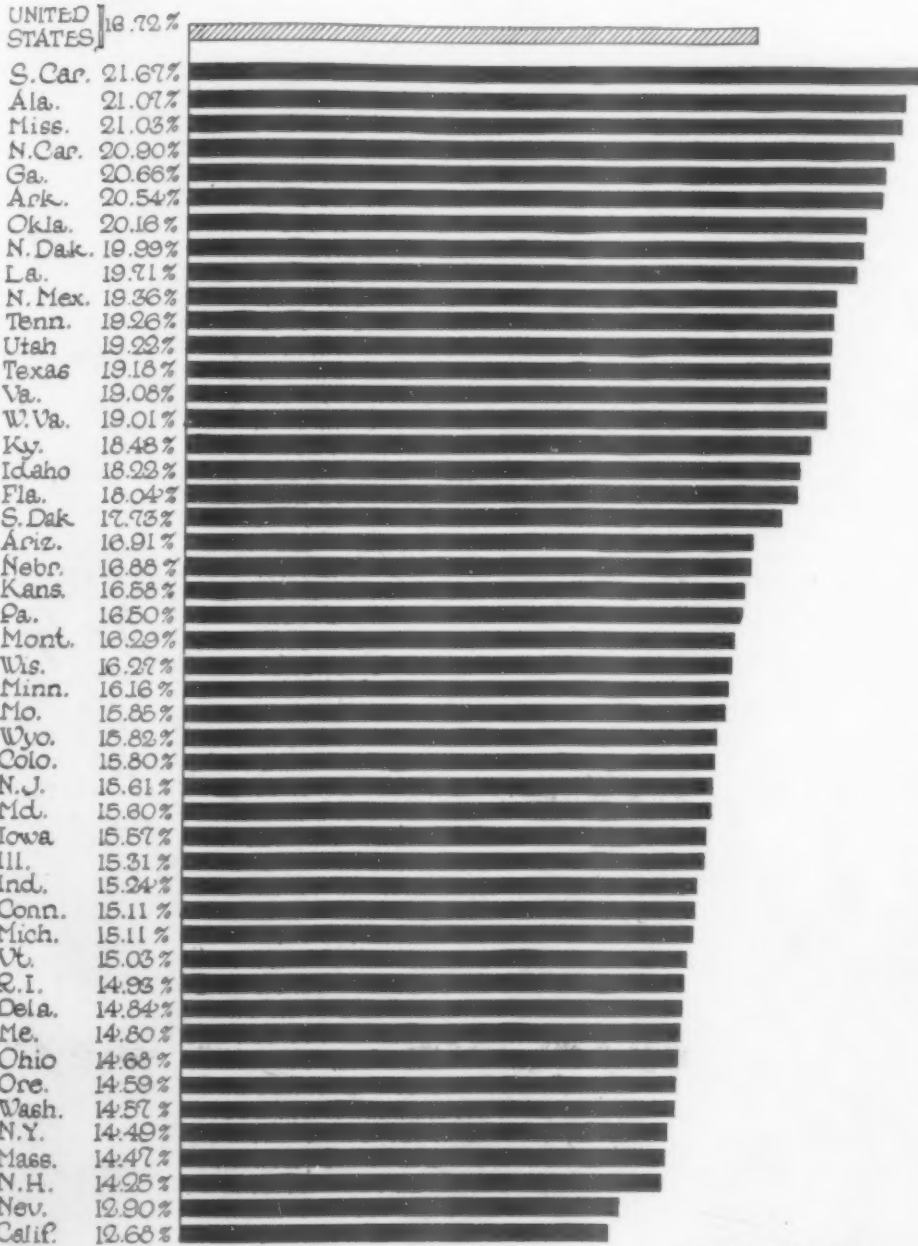
² See Table D, p. 76.

Table 8—Various Sections of the Population of the States as Measures of Educational Load.

States	Total population (a)	Population 17 and under	Population 6 to 17	Population 14 to 17	Per cent of population in each state (b)	Per cent of population in each state (c)	Per cent of population in each state (d)	Per cent of population in each state (e)	Per cent of population in each state (f)	Percentage of total population				Index of educational load based on percentage of population in each age group (100 equals educational load based on percentage of total population) (g)			
										ages 6 to 17				ages 6 to 17			
										6 to 17	14 to 17	14 to 17	14 to 17	ages 6 to 17	ages 6 to 17	ages 6 to 17	ages 6 to 17
										inclusive	inclusive	inclusive	inclusive	ages 6 to 17	ages 6 to 17	ages 6 to 17	ages 6 to 17
United States	100,000,000	30,000,000	20,000,000	10,000,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Alabama	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Arizona	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
California	5,000,000	1,500,000	1,000,000	500,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Colorado	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Connecticut	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Delaware	200,000	60,000	40,000	20,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Florida	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Georgia	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Idaho	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Illinois	4,000,000	1,200,000	800,000	400,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Indiana	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Iowa	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Kansas	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Kentucky	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Louisiana	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Maine	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Maryland	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Massachusetts	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Michigan	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Minnesota	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Mississippi	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Missouri	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Montana	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Nebraska	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Nevada	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
New Hampshire	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
New Jersey	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
New Mexico	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
New York	10,000,000	3,000,000	2,000,000	1,000,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
North Carolina	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
North Dakota	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Ohio	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Oklahoma	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Oregon	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Pennsylvania	6,000,000	1,800,000	1,200,000	600,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Rhode Island	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
South Carolina	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
South Dakota	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Tennessee	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Texas	4,000,000	1,200,000	800,000	400,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Utah	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Vermont	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Virginia	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Washington	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
West Virginia	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Wisconsin	2,000,000	600,000	400,000	200,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0
Wyoming	1,000,000	300,000	200,000	100,000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	100.0	100.0	100.0	100.0

(a) Data in columns 1 and 2 are based on the Fourteenth Federal Census of Population, Bureau of the Census.
 (b) The "17 and under" column in column 3 means that 2.25 percent of the total population of the forty-eight states resides in Alabama and is based on the figures in column 2. Similarly read figures in columns 4-13 inclusive.
 (c) Figures of these columns are based on those of columns 2-5 inclusive. The "14 to 17" after Alabama means that 21.07 percent of the total population of Alabama is included in the age of 14-17 inclusive.
 (d) The indices of column 13 for example, are the result of dividing each figure in column 10 by the 14.75 at the head of that column, which means the index figure for the United States 100 for Alabama 104.02, etc. This means that the educational load credited to Alabama is 104 percent greater (104.02 minus 100), than on total population.

PERCENTAGE *of* POPULATION AGED SIX to THIRTEEN BY STATES 1920



Research Division
National Education Association

Read chart thus: In South Carolina 21.67 percent of the population is aged six to thirteen inclusive; similarly read data for other states.

six to thirteen had been as large in California as in South Carolina, and if California had expended the same amount for the education of each child as it did for those it actually had, California's school bill would have been not \$93,534,315 but \$158,532,737. Similarly New York would have spent not \$183,421,841 but \$273,763,942. Or if instead of taking the ratio of children six to thirteen in South Carolina as a reference point, we take the average ratio of the country as a whole, California's school bill would have been increased in 1922 from \$93,534,315 to \$123,331,112 and New York's from \$183,421,841 to \$211,656,867.

On the other hand, if South Carolina had had as small a percentage of children as California its school bill, assuming equivalent provision per child, would have been not \$9,567,519 but \$5,595,040, while Alabama's would have been reduced from \$12,827,945

to \$7,727,678. Table 9 gives data as to the effect upon the cost of education in the states, of assuming varying percentages of children in the population, and expenditures per child equivalent to those actually made in 1922.

Total population, therefore, was rejected as a measure of the educational load to be borne. But why select the age group six to thirteen? It might be argued that six to seventeen would be better since it would cover the secondary as well as the elementary school ages, and the high school is more and more coming to be an accepted part of all state educational systems. One might go still further and give double weight to those aged fourteen to seventeen, since high school education generally involves an expenditure per pupil approximately double that expended for elementary education.¹

The indices of columns 13 to 15 of Table 8 show, however, that the distribution of the

¹ Swift, Fletcher Harper. *A Biennial Survey of Public School Finance in the United States, 1920-1922*. Bulletin 1923, No. 47, issued by the U. S. Bureau of Education, 1923, p. 5.

FIGURE I

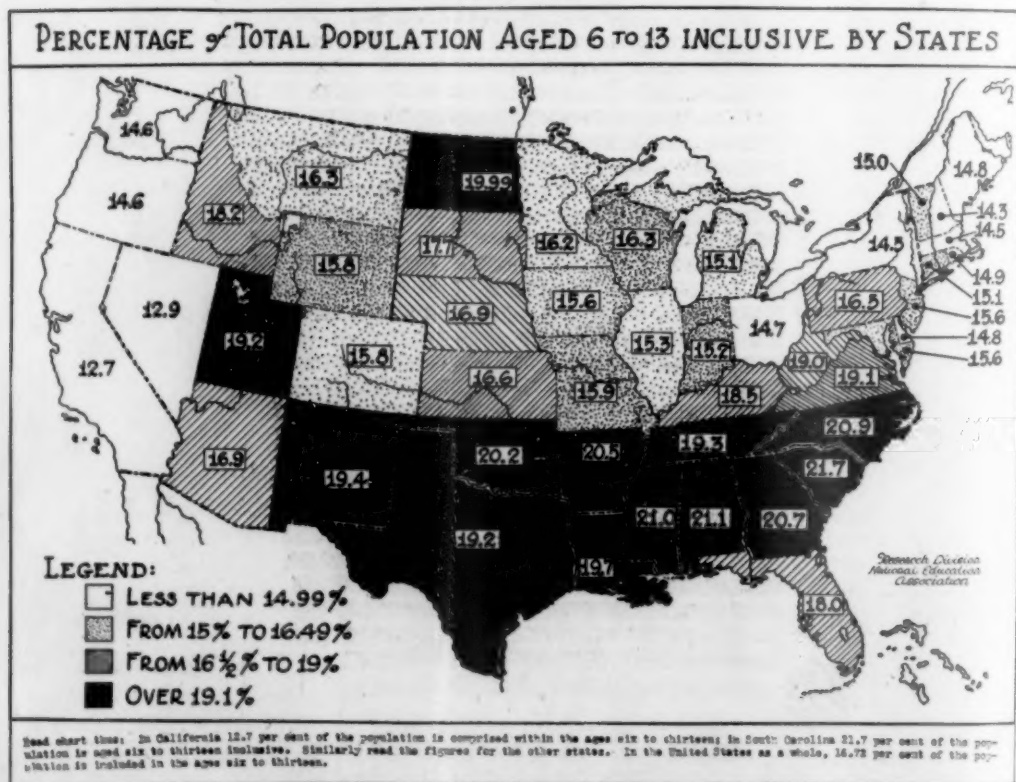


TABLE 9.—EFFECT ON SCHOOL COSTS OF VARIATIONS IN PERCENTAGE OF STATE POPULATIONS AGED 6 TO 13.

States	Actual cost of public elementary and secondary schools in 1922	Hypothetical cost of public elementary and secondary schools in 1922 if percentage of population, aged 6 to 13 had been the same as that found in—			Index of relationship of columns 3, 4, and 5 to column 2; column 2 equals 1.00		
		South Carolina	California	United States	Column 3 to column 2	Column 4 to column 2	Column 5 to column 2
1	2	3	4	5	6	7	8
United States.....	\$1,574,948,776	\$2,045,388,021	\$1,193,143,012	\$1,574,948,776	1.30	.76	1.00
Alabama.....	12,827,945	13,224,686	7,727,678	10,179,293	1.03	.60	.79
Arizona.....	7,065,189	9,057,935	5,312,172	6,985,554	1.28	.75	.99
Arkansas.....	8,828,859	9,293,536	5,449,913	7,186,698	1.05	.62	.81
California.....	93,534,315	158,532,737	93,534,315	123,331,112	1.69	1.00	1.32
Colorado.....	19,366,016	26,528,789	15,492,813	20,493,139	1.37	.80	1.06
Connecticut.....	21,341,789	30,488,270	17,934,276	23,616,011	1.43	.84	1.11
Delaware.....	2,465,708	3,626,041	2,107,443	2,777,950	1.47	.85	1.13
Florida.....	9,768,506	11,769,284	6,879,230	9,054,135	1.20	.70	.93
Georgia.....	13,505,702	14,216,528	8,285,707	10,930,481	1.05	.61	.81
Idaho.....	9,556,267	11,376,508	6,636,297	8,769,631	1.19	.69	.92
Illinois.....	103,201,265	145,353,894	85,290,302	112,702,048	1.41	.83	1.09
Indiana.....	63,358,907	90,512,724	52,799,089	69,510,595	1.43	.83	1.10
Iowa.....	40,514,571	68,770,238	40,255,749	53,172,864	1.39	.81	1.07
Kansas.....	34,319,377	44,570,619	26,197,998	34,610,102	1.30	.76	1.01
Kentucky.....	14,149,189	16,646,105	9,691,225	12,801,220	1.18	.68	.90
Louisiana.....	16,452,576	18,079,754	10,614,565	13,957,055	1.10	.65	.85
Maine.....	8,266,289	12,156,307	7,065,204	9,338,329	1.47	.85	1.13
Maryland.....	14,719,273	20,443,435	11,966,889	15,776,284	1.39	.81	1.07
Massachusetts.....	57,332,711	85,571,210	50,291,852	66,249,955	1.49	.88	1.16
Michigan.....	72,739,880	103,914,114	61,125,950	80,491,181	1.43	.84	1.11
Minnesota.....	52,210,972	69,614,629	41,111,002	54,020,664	1.33	.79	1.03
Mississippi.....	9,390,413	9,680,838	5,656,875	7,465,744	1.03	.60	.80
Missouri.....	40,986,065	56,145,295	32,788,852	43,234,246	1.37	.80	1.05
Montana.....	13,976,623	18,635,497	10,919,237	14,345,297	1.33	.78	1.03
Nebraska.....	30,687,770	39,343,295	23,073,511	30,395,969	1.28	.75	.99
Nevada.....	1,673,249	2,788,748	1,640,440	2,168,826	1.67	.98	1.30
New Hampshire.....	4,883,243	7,398,853	4,360,038	5,729,488	1.52	.89	1.17
New Jersey.....	63,966,428	88,842,261	52,005,226	68,515,883	1.39	.81	1.07
New Mexico.....	5,162,674	5,800,757	3,374,297	4,458,653	1.12	.65	.86
New York.....	183,421,841	273,763,942	160,896,352	211,656,867	1.49	.88	1.15
North Carolina.....	22,079,183	22,999,149	13,381,323	17,663,346	1.04	.61	.80
North Dakota.....	15,420,977	16,761,932	9,760,112	12,898,107	1.09	.63	.84
Ohio.....	116,568,994	171,424,991	100,490,512	132,766,508	1.47	.86	1.14
Oklahoma.....	30,479,357	32,773,502	19,169,407	25,279,387	1.08	.63	.83
Oregon.....	13,629,983	20,343,258	11,852,159	15,619,967	1.49	.87	1.15
Pennsylvania.....	109,468,075	144,036,941	84,206,212	110,932,382	1.32	.77	1.01
Rhode Island.....	7,135,714	10,341,614	6,047,215	7,991,616	1.45	.85	1.12
South Carolina.....	9,567,519	9,567,519	5,595,040	7,381,775	1.00	.58	.77
South Dakota.....	15,552,102	18,965,978	11,108,644	14,666,260	1.22	.71	.94
Tennessee.....	15,155,845	17,029,039	9,970,951	13,157,258	1.12	.66	.87
Texas.....	52,452,075	58,934,916	34,736,474	45,725,809	1.12	.66	.87
Utah.....	9,959,777	11,190,761	6,552,485	8,664,443	1.12	.66	.87
Vermont.....	4,129,358	5,984,577	3,470,049	4,593,790	1.45	.84	1.11
Virginia.....	21,212,606	24,105,234	14,141,737	18,589,612	1.14	.67	.88
Washington.....	29,633,324	44,228,842	25,768,108	34,006,569	1.49	.87	1.15
West Virginia.....	18,616,312	21,154,900	12,410,875	16,373,186	1.14	.67	.88
Wisconsin.....	40,146,601	53,528,921	31,364,602	41,256,491	1.33	.78	1.03
Wyoming.....	5,067,272	6,941,468	4,053,818	5,355,392	1.37	.80	1.06

Read table thus: Alabama expended \$12,827,945 (col. 2) for public elementary and secondary schools in 1922. If the percentage of the population aged 6 to 13 had been the same in Alabama as in South Carolina, and if each child had cost as much to educate as was expended in 1922, the cost would have been \$13,224,686 (col. 3), or 103 percent (col. 6) of what was expended; if the percentage of population aged 6 to 13 had been the same in Alabama as in California, the cost would have been \$7,727,678 (col. 4) or 60 percent (col. 7) of what was expended; if the percentage of population aged 6 to 13 had been the same in Alabama as in the United States as a whole the cost would have been \$10,179,293 (col. 5) or 79 percent (col. 8) of what was expended.

Sources of data: Column 2 from table D, column 6, page 76. Column 3 is obtained by dividing the figures in col. 10 of table 8 by the figure for South Carolina and dividing col. 2 of Table 9 by the results. Column 4 is obtained by dividing the figures in col. 10 of Table 8 by the figures for California and dividing col. 2 of Table 9 by the results. Column 5 is obtained by dividing the figures in col. 2 of Table 9 by the figures in col. 13 of table 8. Column 6 is obtained by dividing the figures in col. 3 by those in col. 2. Column 7 is obtained by dividing the figures in col. 4 by those in col. 2. Column 8 is obtained by dividing the figures in col. 5 by those in col. 2.

total educational burden among the states is practically the same whether six to thirteen, six to seventeen, or six to seventeen with those fourteen to seventeen given double weight, is used as the basis of calculation.

Children Aged Six to Thirteen as a Measure of Educational Obligation

The number of children six to thirteen years of age was, therefore, selected as a basis for determining the relative size of the educational obligations of the states. It gives practically the same result as other measures of school population, and in addition refers to an age period which it is generally accepted should be spent in school.

The use of the number of children as a measure of the educational burden of a state has certain practical advantages. It is approved by tradition and is also readily comprehended by those lacking technical training. It is clearly recognized, however, that the use of the crude number of children in a community as a measure of its educational load will probably soon give way to more scientific measures. Investigations already completed

or now under way indicate that the variations of the states in other factors, such as density of population, will have to be considered before a completely scientific measure of the educational burden of a community can be made.¹

The admittedly crude measure of educational load proposed in this chapter is accepted for two reasons. First, data are not available as yet, so that such factors as density of population can be properly weighted in arriving at more scientific measures of the educational loads of the states. Were such data available, an additional investigation of considerable magnitude would be necessary in order to evaluate them properly. Second, the more scientific measures of educational burden, which will be developed in the future, will probably accept as starting points such measures as the number of children in the population.

Therefore, a more adequate presentation of facts as to the number of children in the various states, along with the data of Chapter I as to the economic resources of the states, should be of value to those who in the future will study the comparative ability of the states to support education.

¹ See Chapter V for citations to these investigations.

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CHAPTER III

The Relative Ability of the States to Support Education

In Chapter I the following measures of the economic power of the states were suggested:

1. Value of tangible wealth
2. Average annual total income
3. Average annual current income
4. Index of economic resources, made up of the average annual total income plus one-tenth the value of wealth

5. Index of economic resources, made up of the average annual current income plus one-tenth the value of wealth

In Chapter II the number of children aged six to thirteen inclusive was suggested as a measure of the educational obligation of the states. To arrive at estimates of the relative ability of the states to support education it is necessary to compare each state's economic resources with its educational obligations.

Comparative Ability to Support Schools

Table 10 gives the result of dividing the various measures of each state's economic power by its number of children aged six to thirteen. The figures of this table are suggested as indications of the comparative ability of the states to support schools. Ability to support schools is thus defined as the number of units of economic power behind each unit of educational work to be performed.

The figures in column 7 to 11 of Table 10 reveal considerable agreement in the ranks of a state in ability to support schools, no matter what measure of its economic power is used. The coefficients of correlation calculated from the ranks of columns 7 to 11 are given in Table 11.¹

Chart IX presents data in graphic form as to the wealth per child for each of the forty-eight states. The extremes are represented by Nevada, with \$45,664 of wealth per child aged six to thirteen, and Mississippi with

\$5,777 of wealth per child, or a ratio of approximately eight to one. Chart X compares the twelve states that have the most wealth per child with the twelve states with the least wealth per child. These charts are one indication of the comparative ability of the states to support schools.

Chart XI presents data in graphic form as to the average annual current income of the states per child. The extremes are represented by California, with \$7,693 per child aged six to thirteen, and Mississippi, with \$1,317 per child, or a ratio of approximately six to one. This chart offers another indication of the comparative ability of the state to support schools.

Chart XII graphically presents a third measure of the relative ability of the states to support education, that derived from the index of economic resources—average annual current income plus one-tenth the value of wealth. The extremes according to this index are Nevada, with \$11,576 of economic power per child, and Mississippi, with \$1,895 of economic power per child, or a ratio of approximately six to one.

The data of Table 10 are rearranged and further interpreted in Table 12. Column 2 of this table indicates that California has \$33,785 of wealth per child aged six to thirteen as compared with \$17,618 in the United States. In column 7 this figure—\$17,618—is given the value 1.00 and each state's wealth per child is expressed as a ratio of this figure. For example, California has \$33,785 of wealth per child which is 1.92 times as much wealth per child as is found on the average in the United States. Similarly, Mississippi, with \$5,777 of wealth per child, has one-third, or .33 times, as much wealth per child as is

¹ It was believed that the various correlation formulae were of less value in indicating the significance of the data presented in this study, than the techniques that have been used. Therefore, although some data as to the coefficients of correlation between some of the variables are presented, they deserve less consideration than their value in analyzing data of a different type often justifies. The rank method of calculating the coefficients of correlation is most frequently used because of its simplicity and because a tryout of several cases showed that it gave substantially the same result as the product moment.

found in the country as a whole. Using the figures of column 7 one may compare the number of units of wealth per child in each state with the number found in the United States as a whole. Also, any state may be conveniently compared with any other state. New York, for example, has 2.2 times as much wealth per child as New Mexico—obtained by dividing 1.39, after New York in

column 7, by .63 the corresponding figure after New Mexico.

In columns 7 to 11 of Table 12, data are given for each state as to the number of units of economic power per child indicated by the various measures of economic ability. These may readily be compared. For example, California has 1.92 times as much ability to support schools as the country as a whole if the value of tangible wealth is accepted as a

TABLE 10.—RELATIVE ECONOMIC ABILITY OF THE STATES TO SUPPORT EDUCATION

States	Wealth per child ages 6 to 13 inclusive (a)	Average annual total income per child ages 6 to 13 inclusive (b)	Average annual current income per child ages 6 to 13 inclusive (c)	Index of economic resources (average total income plus 1/10 of wealth) per child (d)	Index of economic resources (average current income plus 1/10 of wealth) per child (e)	Rank based on total income (Col. 2)	Rank based on current income (Col. 3)	Rank based on index of economic resources (Col. 4)	Rank based on index of economic resources (Col. 5)	Rank based on index of economic resources (Col. 6)
1	2	3	4	5	6	7	8	9	10	11
United States	\$17,618.56	\$4,194.12	\$3,940.16	\$5,955.96	\$5,668.01					
Alabama	5,869.35	1,544.34	1,462.39	2,135.28	2,051.52	47	46	47	47	47
Arizona	21,600.25	4,734.52	4,057.23	6,094.56	6,217.22	17	19	19	16	20
Arkansas	7,190.55	1,569.54	1,566.43	2,288.60	2,287.48	44	45	45	45	45
California	33,765.39	8,868.59	7,693.07	12,247.33	11,071.60	2	1	1	1	2
Colorado	21,039.30	4,979.74	4,489.94	7,084.64	6,595.87	21	13	17	15	18
Connecticut	25,315.37	5,526.64	5,113.89	8,056.36	7,645.13	6	10	9	9	8
Delaware	19,656.49	4,921.54	4,677.46	6,787.09	6,539.04	25	16	13	18	16
Florida	13,917.11	2,751.12	2,374.45	4,145.83	3,766.16	35	25	27	26	26
Georgia	6,464.51	1,619.71	1,649.68	2,256.16	2,236.13	46	44	44	44	44
Idaho	17,639.48	3,812.81	3,206.91	5,578.86	4,969.97	29	28	30	30	31
Illinois	22,332.08	5,704.13	5,259.17	7,937.34	7,486.37	13	9	7	10	11
Indiana	19,737.39	3,967.87	3,749.47	5,941.21	5,745.80	24	24	22	27	23
Iowa	20,044.06	3,826.54	3,554.34	6,631.85	6,568.97	4	28	25	20	19
Kansas	21,749.64	5,854.77	2,475.49	5,989.19	5,596.46	20	35	29	25	20
Kentucky	7,964.43	2,074.11	2,114.86	2,670.56	2,311.32	43	41	41	41	41
Louisiana	9,871.88	2,306.79	2,149.93	3,163.96	3,107.12	40	40	40	40	40
Maine	17,882.00	4,445.56	4,060.14	6,203.78	5,808.57	30	20	20	24	22
Maryland	17,407.70	4,900.73	4,536.43	6,641.50	6,277.19	21	17	16	19	18
Massachusetts	23,102.38	6,837.00	6,085.60	8,967.24	8,395.83	12	3	3	4	4
Michigan	20,627.73	5,103.90	4,643.90	7,156.67	6,716.67	25	11	14	13	13
Minnesota	22,119.45	4,211.54	3,510.80	6,623.18	5,722.62	14	22	27	21	24
Mississippi	6,776.92	1,351.57	1,316.94	1,909.28	1,894.63	48	48	48	48	48
Missouri	18,480.80	3,800.08	3,596.10	5,646.10	5,446.17	27	29	25	23	29
Montana	23,264.07	5,128.73	3,759.85	8,454.14	6,085.23	11	31	23	31	21
Nebraska	24,233.92	3,635.77	3,234.78	6,239.16	5,568.14	9	27	29	23	25
Nevada	45,664.40	6,826.29	7,009.21	11,092.73	11,875.66	1	4	2	2	1
New Hampshire	21,412.78	4,976.93	4,566.43	7,118.32	6,707.82	19	14	15	14	14
New Jersey	23,823.63	5,709.58	5,126.40	8,092.71	7,515.84	10	8	8	8	10
New Mexico	11,408.87	2,477.41	2,385.69	3,587.87	3,496.08	56	56	56	56	57
New York	24,499.88	7,465.63	5,804.63	9,912.62	9,254.62	8	2	5	3	3
North Carolina	8,449.11	1,736.41	1,694.35	2,641.32	2,589.37	42	43	43	43	43
North Dakota	19,053.48	2,815.21	2,236.80	4,465.86	4,143.68	38	37	38	34	34
Ohio	21,824.93	5,019.77	4,696.82	7,202.27	6,679.31	16	12	12	11	12
Oklahoma	2,747.48	2,728.64	2,440.75	3,703.38	3,415.49	59	55	56	57	58
Oregon	18,062.47	5,742.39	4,956.16	6,545.63	7,761.40	5	7	11	5	5
Pennsylvania	19,961.66	4,882.72	4,416.29	6,846.91	6,412.46	23	18	18	17	17
Rhode Island	21,260.23	4,089.32	3,588.76	6,215.34	7,711.80	19	5	5	7	6
South Carolina	6,828.23	1,496.76	1,522.38	2,149.57	2,185.20	45	47	46	46	46
South Dakota	25,777.32	3,726.08	2,952.07	6,303.61	5,879.80	5	30	31	22	27
Tennessee	7,567.68	1,930.76	1,844.70	2,867.50	2,781.46	41	42	42	42	42
Texas	10,950.30	3,047.38	2,715.96	4,143.12	3,811.78	37	33	33	35	35
Utah	16,678.49	3,109.56	2,856.71	4,786.11	4,564.27	32	32	32	32	32
Vermont	15,885.79	4,239.96	3,813.21	5,825.54	5,396.79	34	31	31	30	30
Virginia	10,611.49	2,331.03	2,154.08	3,412.18	3,235.22	30	39	39	39	39
Washington	25,184.47	5,811.06	5,106.12	8,390.30	7,624.87	7	6	10	6	9
West Virginia	16,710.94	2,665.54	2,622.53	4,253.63	4,293.62	35	34	34	35	35
Wisconsin	19,354.37	4,111.80	3,672.90	5,946.63	5,608.33	26	23	24	26	25
Wyoming	22,099.27	4,970.96	3,691.04	7,180.88	7,700.98	15	15	6	12	7

(a) Wealth per child ages 6 to 13 inclusive is obtained by dividing wealth as given in Table 5, column 3, by number of children as given in column 3 of Table 6.

(b) Average annual total income per child 6 to 13 is obtained by dividing total income as given in column 2 of Table 5 by number of children given in column 3 of Table 6.

(c) Average annual current income per child 6 to 13 is obtained by dividing average current income as given in column 12 of Table 5 by number of children given in column 3 of Table 6.

(d) This figure is obtained by dividing the figures of column 6 of Table 5 by number of children given in column 3 of Table 6.

(e) This figure is obtained by dividing the figures of column 17 of Table 5 by number of children given in column 3 of Table 6.

CHART IX

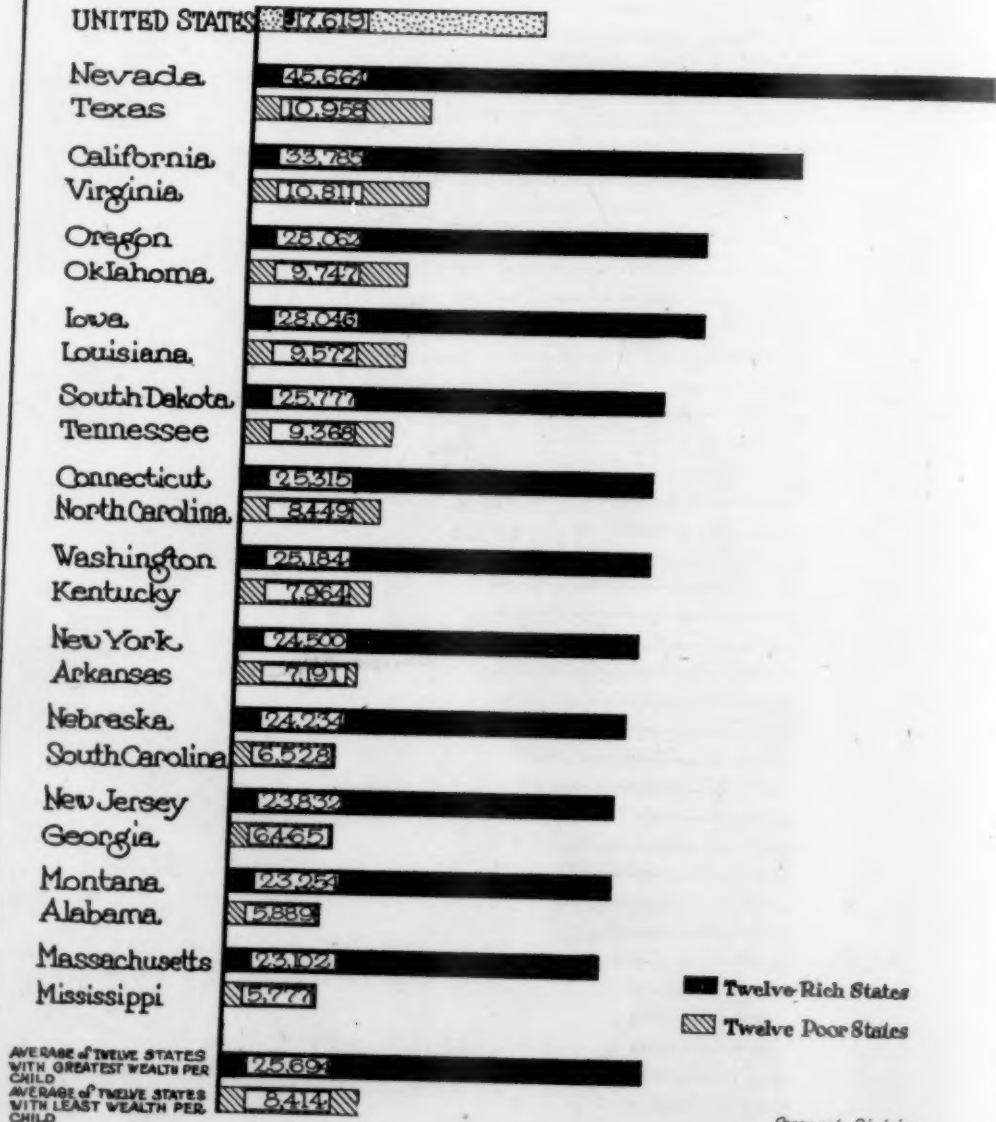
WEALTH PER CHILD BY STATES



Research Division
National Education Assn.

CHART X

COMPARISON OF WEALTH PER CHILD AGED 6 to 13 OF TWELVE RICH AND TWELVE POOR STATES



Read chart thus: Nevada, one of the 12 states with the greatest wealth per child, has \$45.664 of tangible wealth per child aged 6 to 13. Texas one of the 12 states with the least wealth per child, has \$10.955 of tangible wealth per child aged 6 to 13. Similarly read data for 11 other pairs of states.

CHART XI

AVERAGE ANNUAL CURRENT INCOME PER CHILD BY STATES



Research Division
National Education Assn.

CHART XII

INDEX of ECONOMIC RESOURCES per CHILD by STATES



Research Division
National Education Assn.

measure of economic power. Total income indicates that California has 2.11 times as much ability to support schools as the rest of the nation. The corresponding figures for current income and the two indices of economic resources are: 2.00, 2.06, and 1.98—columns 9 to 11.

In column 12 of Table 12 the values in the five preceding columns are averaged. These averages are the basis of the rank order in which the states of the table are arranged. The values of this column are offered as an answer to the question: What is the relative ability of the states to support education providing they tap their economic resources in an ideal manner?

These values are plotted on a map of the United States in Figure 2. In this map the number of units of economic power per child on the average in the nation is given the value 1.00. The comparable figure for Mississippi is .33, which means that Mississippi has one-third as much economic power per child as is found in the nation as a whole. California, on the other hand, has 2.01 times as much economic power behind each child as is found in the nation as a whole. After dividing the figure given on the map for California, 2.01, by that for Mississippi, .33, one may say that California has 6.09 times as much economic

power per child as Mississippi. Other states may be compared using the same method.

Summarized Statement of Differences in Ability to Support Schools

These statements as to the comparative economic ability of the states to meet their educational obligations may be based upon Table 12:

If wealth is accepted as a measure of economic ability the richest state of the forty-eight is 7.9 times as able to meet its educational obligations as the poorest state.

If average annual *total* income is accepted as a measure of economic ability the richest state of the forty-eight is 6.66 times as able to meet its educational obligations as the poorest state.

If average annual *current* income is accepted as a measure of economic ability the richest state of the forty-eight is 5.84 times as able to meet its educational obligations as the poorest state.

If the index of economic resources made up of a combination of wealth and *total* income is accepted as a measure of economic ability the richest state of the forty-eight is 6.42 times as able to meet its educational obligations as the poorest state.

If the index of economic resources made up

TABLE 11.—CORRELATIONS AMONG VARIOUS UNITS OF ECONOMIC POWER PER CHILD AGES 6-13 FOR THE 48 STATES

	Wealth	Average total income	Average current income	Total income and 1/10 wealth
Average total income	.819			
Average current income	.812	.984		
Total income and 1/10 wealth	.887	.985	.970	
Current income and 1/10 wealth	.883	.976	.981	.987

Coefficients calculated from the ranks of columns 7 to 11 of Table 10, using the rank method; see Thurstone, L. L., *The Fundamentals of Statistics*, The Macmillan Co., New York, 1925, p. 224.

of a combination of wealth and current income is accepted as a measure of economic ability the richest state of the forty-eight is 6.11 times as able to meet its educational obligations as the poorest state.

If one wishes to consider the states in groups, these statements may be based upon the data of Table 12:

If wealth is accepted as a measure of economic ability the twelve richest states of the

forty-eight, on the average, are 3.00 times as able to meet their educational obligations as the twelve poorest states.

If average annual *total* income is accepted as a measure of economic ability the twelve richest states of the forty-eight, on the average, are 3.41 times as able to meet their educational obligations as the twelve poorest states.

If average annual *current* income is ac-

TABLE 12.—WEALTH, INCOME AND INDEX OF ECONOMIC RESOURCES PER CHILD, AGED 6 TO 13 INCLUSIVE OF THE STATES

States	Wealth per child (a)	Average annual total income per child	Average annual current income per child	Index of economic resources (total income plus wealth) per child	Index of economic resources (current income plus wealth) per child	Units of wealth per child (b)	Units of annual total income per child (Col. 2)	Units of annual current income per child (Col. 4)	Units of economic resources per child (Col. 6)	Units of economic resources per child (Col. 8)	Average Col. 7-11 (c)
1	2	3	4	5	6	7	8	9	10	11	12
United States	\$17,618.56	\$4,194.12	\$3,840.18	\$6,958.28	\$5,628.01	1.00	1.00	1.00	1.00	1.00	1.00
California	33,788.38	8,668.69	7,692.06	12,847.23	11,071.60	1.92	2.11	2.00	2.06	1.98	2.01
Nevada	46,664.42	6,526.28	7,009.21	11,092.73	11,876.66	2.89	1.84	1.83	1.86	2.07	1.90
New York	24,409.98	7,462.63	6,804.63	9,912.62	9,254.62	1.39	1.78	1.77	1.66	1.68	1.66
Massachusetts	23,102.38	6,637.00	6,005.60	8,947.24	8,395.83	1.31	1.59	1.58	1.50	1.50	1.49
Oregon	20,062.47	8,742.38	4,958.16	8,540.63	7,761.40	1.59	1.37	1.29	1.44	1.38	1.42
Washington	25,184.47	8,611.86	8,106.12	8,280.30	7,624.87	1.43	1.39	1.33	1.40	1.36	1.38
Rhode Island	21,260.23	6,089.31	8,898.78	8,216.34	7,711.80	1.21	1.45	1.45	1.28	1.28	1.27
Connecticut	23,316.37	8,626.04	8,113.69	8,008.28	7,646.13	1.44	1.32	1.28	1.36	1.34	1.35
New Jersey	23,631.63	8,708.48	8,128.39	8,092.71	7,816.86	1.35	1.32	1.34	1.28	1.28	1.28
Illinois	22,332.06	8,704.13	8,582.17	7,837.54	7,486.37	1.27	1.36	1.37	1.33	1.34	1.33
Wyoming	22,099.27	4,970.96	5,491.04	7,180.58	7,700.94	1.25	1.19	1.43	1.21	1.37	1.29
Ohio	21,824.93	8,019.77	4,696.82	7,202.27	6,879.31	1.24	1.20	1.32	1.21	1.23	1.23
First Quartile	24,329.96	6,429.40	5,823.63	8,662.40	8,286.85	1.59	1.53	1.52	1.49	1.48	1.50
Michigan	20,637.73	5,109.90	4,663.90	7,156.67	6,716.67	1.17	1.22	1.21	1.20	1.20	1.20
New Hampshire	21,415.78	4,976.83	4,666.43	7,116.32	6,707.62	1.22	1.19	1.19	1.20	1.20	1.20
Colorado	21,059.30	4,976.73	4,489.94	7,084.66	6,595.07	1.20	1.19	1.17	1.19	1.19	1.19
Delaware	18,466.49	4,321.53	4,473.48	6,787.09	6,539.04	1.04	1.17	1.22	1.14	1.17	1.15
Pennsylvania	19,961.69	4,852.72	4,414.29	6,946.91	6,412.48	1.13	1.16	1.16	1.15	1.14	1.15
Arizona	21,600.35	4,734.52	4,067.23	6,894.55	6,217.28	1.23	1.13	1.04	1.14	1.14	1.14
Iowa	20,046.08	3,826.64	3,564.36	6,631.28	6,368.97	1.59	.91	.98	1.11	1.14	1.14
Maryland	17,607.70	4,900.73	4,836.42	6,641.50	6,277.19	.99	1.17	1.18	1.12	1.12	1.12
Minnesota	22,119.42	4,211.24	3,610.88	6,423.18	5,722.82	1.26	1.00	.91	1.06	1.02	1.06
Maine	17,582.00	4,449.56	4,080.16	6,203.76	5,008.37	1.00	1.04	1.05	1.04	1.04	1.04
Nebraska	24,233.92	3,916.77	3,234.74	6,239.16	5,068.14	1.58	.91	.84	1.05	.99	1.03
South Dakota	20,777.32	3,728.08	2,952.07	6,303.61	5,029.80	1.45	.89	.77	1.06	.99	1.03
Second Quartile	21,342.38	4,622.05	4,156.54	6,759.28	6,294.78	1.21	1.10	1.08	1.13	1.12	1.12
Indiana	19,733.39	3,967.87	3,769.46	6,941.21	6,742.80	1.12	.98	.98	1.00	1.05	1.02
Montana	23,254.07	3,128.73	3,759.87	6,454.14	6,085.23	1.32	.98	.98	.98	1.09	1.01
Kansas	21,249.64	3,864.23	3,473.49	6,389.19	5,998.46	1.21	.92	.90	1.01	1.00	1.01
Wisconsin	19,364.37	4,111.19	3,672.90	6,946.63	6,508.33	1.04	.98	.92	1.00	.98	.99
Vermont	16,850.79	4,239.96	3,613.21	6,822.54	6,396.79	.90	1.01	.99	.96	.96	.97
Missouri	18,480.80	3,800.01	3,596.09	6,646.17	6,446.17	1.05	.91	.94	.95	.97	.96
Idaho	17,630.48	3,612.81	3,206.91	6,878.86	6,469.97	1.00	.91	.84	.94	.89	.92
Utah	16,876.49	3,108.86	2,866.71	4,796.11	4,504.27	.96	.94	.75	.81	.81	.81
West Virginia	16,710.93	2,868.64	2,632.53	4,534.63	4,290.62	.95	.68	.68	.76	.77	.77
North Dakota	19,053.48	2,816.21	2,236.80	4,420.66	4,140.65	1.08	.80	.68	.74	.74	.75
Texas	10,958.30	3,047.28	2,715.95	4,143.12	3,611.78	.82	.75	.71	.70	.68	.69
Florida	13,917.11	2,761.12	2,374.48	4,142.83	3,766.16	.79	.64	.62	.70	.67	.69
Third Quartile	16,606.48	3,470.23	3,183.96	5,130.89	4,644.60	.94	.85	.85	.86	.86	.86
Oklahoma	9,747.48	2,728.63	2,440.78	3,703.38	3,415.49	.55	.68	.64	.62	.61	.61
New Mexico	11,103.67	2,477.41	2,288.69	3,587.97	3,496.06	.68	.59	.62	.60	.62	.61
Virginia	10,811.43	2,331.03	2,156.08	3,412.18	3,235.22	.61	.54	.54	.57	.58	.58
Louisiana	9,571.69	2,306.79	2,149.92	3,265.98	3,107.12	.53	.54	.56	.56	.56	.56
Kentucky	7,964.43	2,074.11	2,114.88	2,970.56	2,911.32	.48	.49	.50	.48	.48	.49
Tennessee	9,867.60	1,930.73	1,844.70	2,867.00	2,791.46	.48	.48	.48	.48	.48	.49
North Carolina	8,449.11	1,796.41	1,694.36	2,641.32	2,539.27	.48	.45	.44	.46	.45	.45
Georgia	6,464.61	1,619.71	1,649.68	2,365.16	2,296.13	.37	.39	.40	.38	.41	.40
Arkansas	7,190.55	1,569.54	1,568.43	2,280.60	2,287.48	.41	.37	.41	.38	.41	.40
South Carolina	6,828.23	1,496.74	1,633.38	2,149.87	2,185.20	.37	.36	.40	.36	.39	.38
Alabama	8,099.38	1,844.34	1,468.39	2,133.28	2,061.32	.33	.37	.38	.36	.37	.36
Mississippi	6,776.92	1,331.67	1,318.94	1,909.26	1,894.63	.33	.32	.34	.32	.34	.33
Fourth Quartile	7,987.58	1,884.84	1,813.74	2,683.80	2,612.80	.45	.45	.47	.45	.47	.46

(a) The data of columns 2 to 6 of this table are the same as given in Table 10, columns 2 to 6. They are rearranged in accordance with the ranking indicated by column 12 of this table.

(b) In columns 7 to 11, the wealth per child in the United States is taken as unity "1", and the figures in column 7 are obtained by dividing every figure in column 2 by \$17,618.56, the wealth per child in the United States; a similar procedure is used in columns 8 to 11.

(c) Column 12 is obtained by averaging columns 7 to 11.

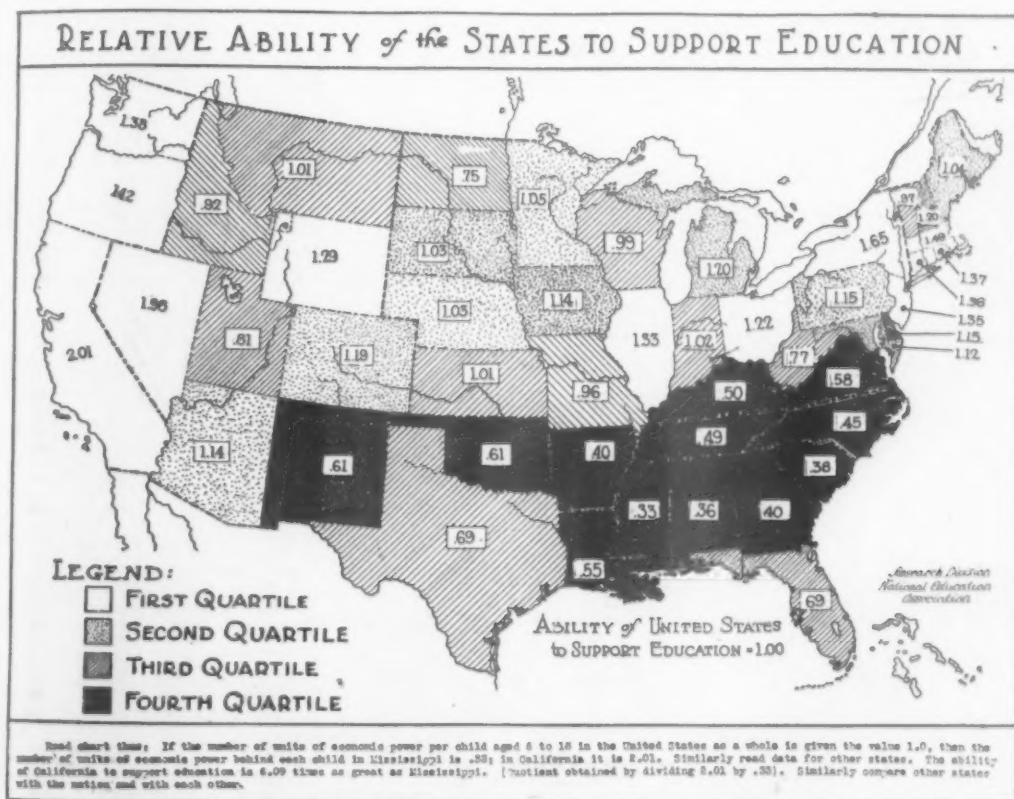
cepted as a measure of economic ability the twelve richest states of the forty-eight, on the average, are 3.23 times as able to meet their educational obligations as the twelve poorest states.

If the index of economic resources made up of a combination of wealth and *total* income is accepted as a measure of economic ability the twelve richest states of the forty-eight, on the average, are 3.17 times as able to meet their educational obligations as the twelve poorest states.

the average, are 3.30 times as able to meet their educational obligations as the twelve poorest states.

If the index of economic resources made up of a combination of wealth and *current* income is accepted as a measure of economic ability the twelve richest states of the forty-eight, on the average, are 3.17 times as able to meet their educational obligations as the twelve poorest states.

FIGURE II



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CHAPTER IV

Some Accompaniments of the Differences in Ability to Support Education and the Permanency of These Differences

The preceding chapters have revealed differences in the economic ability of the states to support schools. What significance, if any, does the existence of these differences have for education?

This chapter will present data bearing upon this question. It will seek to discover if there are any relationships between the educational situation in a state and the economic ability of that state to support schools. It will also present data bearing upon the permanency of existing differences in ability to support education.

Economic Ability and Financial Support Given Education

What relationship exists between the economic ability of the states to support education and the financial provision made for education?

Table 13 presents data pertinent to the consideration of this question. This table gives, for 1922, four indications of the financial support accorded education by each of the states. These are as follows:

1. Total amount expended per child of school age
2. Average annual salary of teachers
3. Non-salary costs per pupil in average daily attendance
4. Average value of school property per pupil enrolled.

It is believed that these four factors taken together offer a reasonable basis for comparing the financial support accorded education in the different states.

There seems to be a considerable agreement between the ability to support education and the support actually accorded. One might interpret these data as supporting the following conclusion of a recent investigation:

What a state can spend for education depends upon many factors—the first and foremost is the

state's economic strength and vigor, since a rich state is able to support more of everything than a poor and decadent one.¹

A conclusion from a study of conditions within a single state is similar:

The districts having the high valuations per unit of load pay the high salaries, spend more per pupil, give the longest school year, and employ teachers who possess the highest qualifications.²

According to the data of Table 13, the states with the larger number of units of economic power per unit of educational load provide the larger amounts of educational support per child of school age, pay their teachers the higher salaries, provide greater support per pupil in average daily attendance for non-salary costs, and maintain more substantial school plants per pupil enrolled.

Referring to the indices of columns 10 to 13 of Table 13 these statements may be made:

The twelve richest states taken as a group provide 3.4 times as much educational support per child of school age as the twelve poorest states. (Obtained by dividing 1.41 by .41.)

The twelve richest states pay their teachers salaries 2.4 times as high as the twelve poorest states.

The twelve richest states provide for non-salary costs 3.6 times as much per pupil in average daily attendance as the twelve poorest states.

The twelve richest states provide a school plant worth 3.5 times as much per pupil enrolled as the twelve poorest states.

Chart XIII summarizes the data as to the relation of ability to support schools and the support actually accorded. Considering the states in groups of twelve, there is a regular

¹ Strayer, George D., and Haig, Robert Murray. *The Financing of Education in the State of New York*. p. 127.

² Morrison, Henry C. *The Financing of Public Schools in the State of Illinois*. p. 56.

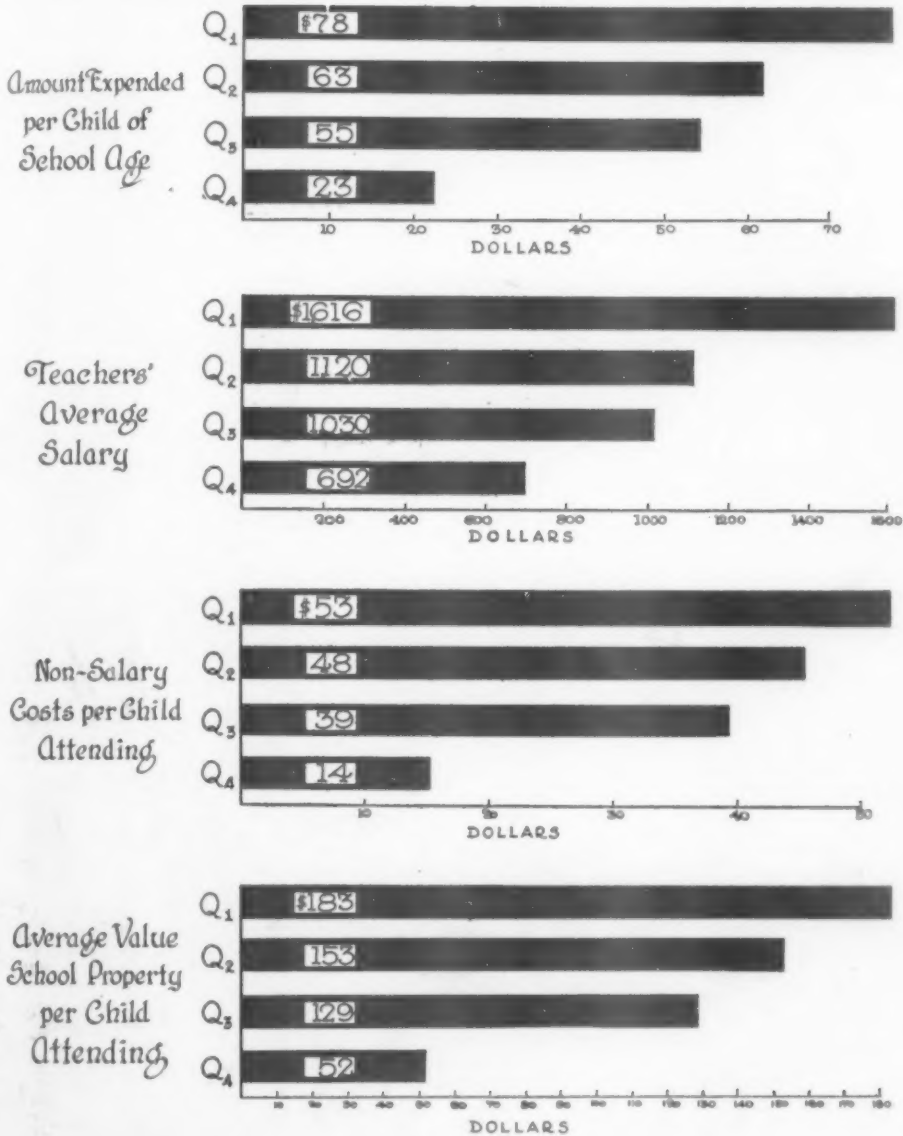
TABLE 13.—INDICATIONS OF FINANCIAL SUPPORT ACCORDED EDUCATION
(States arranged according to their ability to support education.)

[illegible]

(a) These figures are taken from column 1, Table 2, Supplement to American School Journal, December 1931. (b) These figures are taken from column 9, Table 2, Supplement to American School Journal, December, 1936. (c) These figures are based on column 8 of this Table. (d) These figures are taken from column 5, Table 1, page 17, Bulletin 1934, No. 2, Statistical Abstract of the United States. (e) These figures are based on column 3 of this Table. (f) These figures are based on column 4 of this Table. (g) These figures are based on column 5 of this Table. (h) These figures are based on column 6 of this Table. (i) Estimates. (j) Distribution for 1930.

CHART XIII

FINANCIAL SUPPORT ACCORDED EDUCATION IN 1922



After the states have been ranked from 1 to 48 as to ability to support education:

- Q₁ - Average for 12 states ranked 1 to 12
- Q₂ - Average for 12 states ranked 13 to 24
- Q₃ - Average for 12 states ranked 25 to 36
- Q₄ - Average for 12 states ranked 37 to 48

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increase in all items of school support with increasing ability to pay.

Are these facts true only of the present, post-war period, or have they been true of other decades? Data comparable to those of Table 13 are not available earlier than

1910. Tables 14 and 15 present data for 1918 and 1910 comparable to those already given for 1922. The data of these tables point toward the same conclusion as those for 1922. This agreement may be conveniently studied by consulting the indices of Table 16, assem-

TABLE 14.—INDICATIONS OF FINANCIAL SUPPORT ACCORDED EDUCATION IN 1918
(States arranged according to their ability to support education)

States	Total amount expended per child of school age in 1918 (a)	Average annual salary of teachers, principals and supervisors in 1918 (b)	Total cost excluding salaries per pupil in average daily attendance in 1918 (c)	Rank in total amount expended per child of school age in 1918	Rank in average annual salary of teachers, principals and supervisors in 1918	Rank in total cost excluding salaries per pupil in average daily attendance in 1918	Index of total expenditure per child in 1918 (col. 2)	Index of teachers' average salary in 1918 (col. 3)	Index of non-salary costs in 1918 (col. 4)
1	2	3	4	5	6	7	8	9	10
United States...	\$27.54	\$645	\$22.03				1.00	1.00	1.00
California.....	\$56.26	\$1,057	\$30.88	2	1	16	2.04	1.64	1.40
Nevada.....	42.62	887	28.11	7	6	20	1.55	1.38	1.28
New York.....	33.48	1,044	19.38	23	2	30	1.21	1.62	.88
Massachusetts...	36.34	858	26.11	19	7	24	1.32	1.33	1.19
Oregon.....	38.62	702	23.47	18	16	28	1.40	1.09	1.07
Washington.....	41.96	950	31.65	9	4	12	1.52	1.47	1.44
Rhode Island....	27.45	802	26.15	29	9	23	1.00	1.24	1.19
Connecticut.....	36.16	792	25.43	20	10	25	1.31	1.23	1.15
New Jersey.....	40.92	911	35.52	12	5	7	1.48	1.41	1.61
Illinois.....	33.13	804	24.80	24	8	26	1.20	1.25	1.13
Wyoming.....	51.01	596	27.00	4	23	22	1.85	.92	1.23
Ohio.....	40.51	752	30.76	15	12	17	1.47	1.17	1.40
First Quartile...	37.58	898	26.23				1.36	1.39	1.19
Michigan.....	41.67	663	32.92	10	19	10	1.51	1.03	1.49
New Hampshire...	31.69	548	27.05	26	29	21	1.15	.85	1.23
Colorado.....	41.00	756	31.25	11	11	13	1.49	1.17	1.42
Delaware.....	16.32	561	11.28	38	28	37	.59	.87	.51
Pennsylvania....	31.71	702	31.19	25	15	14	1.15	1.09	1.42
Arizona.....	53.01	990	36.13	3	3	6	1.92	1.49	1.64
Iowa.....	50.23	578	39.62	5	26	3	1.82	.90	1.80
Maryland.....	16.47	709	11.78	37	14	36	.60	1.10	.53
Minnesota.....	39.36	651	34.19	16	21	8	1.43	1.01	1.56
Maine.....	24.75	449	15.82	32	37	34	.90	.70	.72
Nebraska.....	40.87	584	32.33	13	25	11	1.48	.91	1.47
South Dakota....	34.78	496	36.90	21	32	5	1.26	.77	1.67
Second Quartile...	35.75	644	31.41				1.30	1.00	1.43
Indiana.....	38.68	617	29.35	17	22	18	1.40	.96	1.33
Montana.....	88.93	689	57.62	1	17	1	3.22	1.07	2.62
Kansas.....	34.51	525	28.71	22	31	19	1.25	.81	1.30
Wisconsin.....	25.18	528	24.57	31	30	27	.91	.82	1.12
Vermont.....	29.75	467	23.04	28	34	29	1.08	.72	1.05
Missouri.....	25.43	653	18.57	30	20	31	.92	1.01	.84
Idaho.....	42.51	685	34.08	8	18	9	1.54	1.06	1.55
Utah.....	40.66	733	31.05	14	13	15	1.47	1.14	1.41
West Virginia....	16.79	418	10.29	36	38	38	.61	.65	.47
North Dakota....	44.43	580	45.19	6	24	2	1.61	.91	2.05
Texas.....	17.03	487	13.23	35	33	35	.62	.76	.60
Florida.....	17.34	397	16.73	34	39	33	.63	.62	.76
Third Quartile...	27.43	553	22.75				1.00	.86	1.03
Oklahoma.....	19.42	455	18.19	33	36	32	.70	.71	.83
New Mexico.....	30.56	563	39.08	27	27	4	1.11	.87	1.77
Virginia.....	12.24	385	9.06	39	43	39	.44	.60	.41
Louisiana.....	10.20	465	8.71	42	35	42	.37	.72	.40
Kentucky.....	11.81	390	8.94	40	40	40	.43	.60	.41
Tennessee.....	11.05	370	7.16	41	44	43	.40	.57	.33
North Carolina...	8.26	300	4.66	45	48	45	.30	.47	.21
Georgia.....	8.12	388	3.59	46	41	47	.29	.60	.16
Arkansas.....	8.87	387	3.78	44	42	46	.32	.60	.17
South Carolina...	8.96	315	8.81	43	46	41	.32	.49	.40
Alabama.....	7.98	345	5.08	47	45	44	.29	.53	.23
Mississippi.....	6.55	311	1.20	48	47	48	.24	.48	.05
Fourth Quartile...	10.64	379	7.43				.39	.50	.34

(a) Calculated from data of *Biennial Survey of Education, 1916-18*, U. S. Bureau of Education, Vol. 3, p. 196, Table 56, Col. 6, and p. 143, Table 20, Col. 3.

(b) Calculated from data of *Biennial Survey of Education, 1916-18*, U. S. Bureau of Education, Vol. 3, p. 194, Table 55, Col. 3, p. 162, Table 38, Col. 12, and p. 160, Table 37, Cols. 11 and 15.

(c) Calculated from data of *Biennial Survey of Education, 1916-18*, U. S. Bureau of Education, Vol. 3, p. 196, Table 56, Col. 6, p. 194, Table 55, Col. 3, and p. 151, Table 27, Col. 8.

bled from the latter columns of Tables 13, year 1922, may be repeated for 1918 with but slight changes in the stated ratios, as follows:

The statements made on page 39, for the The twelve richest states taken as a group

TABLE 15.—INDICATIONS OF FINANCIAL SUPPORT ACCORDED EDUCATION IN 1910
(States arranged according to their ability to support education)

States	Total amount expended per child of school age in 1910 (a)	Average annual salary of teachers, principals and supervisors in 1910 (b)	Total cost excluding salaries per pupil in average daily attendance in 1910 (c)	Rank in total amount expended per child of school age in 1910	Rank in average annual salary of teachers, principals and supervisors in 1910	Rank in total cost excluding salaries per pupil in 1910	Index of total expenditure per child in 1910 (col. 2)	Index of teachers average salary in 1910 (col. 3)	Index of non-salary costs in 1910 (col. 4)
1	2	3	4	5	6	7	8	9	10
United States...	\$16.98	\$484	\$13.39				1.00	1.00	1.00
California.....	\$33.72	\$917	\$27.13	3	1	4	1.99	1.89	2.03
Nevada.....	35.51	470	52.60	2	21	1	2.09	.97	3.93
New York.....	25.09	813	13.55	11	3	25	1.48	1.68	1.01
Massachusetts.....	27.68	757	19.22	5	4	12	1.63	1.56	1.44
Oregon.....	27.39	516	22.66	6	17	9	1.61	1.07	1.69
Washington.....	40.66	692	35.45	1	6	2	2.39	1.43	2.65
Rhode Island.....	20.63	608	17.01	22	9	17	1.21	1.26	1.27
Connecticut.....	21.35	561	16.90	18	12	18	1.26	1.16	1.26
New Jersey.....	27.33	731	25.39	7	5	5	1.61	1.51	1.90
Illinois.....	24.15	588	21.50	13	11	10	1.42	1.21	1.61
Wyoming.....	25.77	439	18.46	10	24	14	1.52	.91	1.38
Ohio.....	23.71	524	16.81	15	15	19	1.40	1.08	1.26
First Quartile...	27.75	635	19.41				1.63	1.31	1.45
Michigan.....	19.24	479	13.47	27	20	26	1.13	.99	1.01
New Hampshire.....	17.79	328	13.09	28	35	27	1.05	.68	.98
Colorado.....	27.03	642	17.43	9	8	16	1.59	1.33	1.30
Delaware.....	11.28	414	8.57	34	27	34	.67	.86	.64
Pennsylvania.....	21.14	554	20.30	20	13	11	1.24	1.14	1.52
Arizona.....	30.40	817	15.20	24	2	20	1.20	1.69	1.14
Iowa.....	20.14	302	12.30	25	38	29	1.19	.62	.92
Maryland.....	10.49	515	6.52	35	18	38	.62	1.06	.49
Minnesota.....	22.49	486	18.24	17	19	15	1.32	1.00	1.36
Maine.....	17.04	244	10.42	29	45	30	1.00	.51	.78
Nebraska.....	20.77	411	15.13	21	28	21	1.22	.85	1.13
South Dakota.....	22.59	329	22.84	16	34	7	1.33	.68	1.71
Second Quartile...	19.20	460	16.30				1.13	.95	1.22
Indiana.....	21.71	523	13.99	19	16	23	1.28	1.08	1.04
Montana.....	31.40	645	28.60	4	7	3	1.85	1.33	2.14
Kansas.....	19.54	429	13.87	26	25	24	1.15	.89	1.04
Wisconsin.....	15.57	456	12.70	30	22	28	.92	.94	.95
Vermont.....	20.55	266	14.26	23	43	22	1.21	.55	1.06
Missouri.....	13.45	442	10.08	31	23	32	.79	.91	.75
Idaho.....	23.87	549	18.56	14	14	13	1.41	1.13	1.39
Utah.....	25.08	592	23.83	12	10	6	1.48	1.22	1.78
West Virginia.....	11.57	323	6.61	33	36	37	.68	.67	.49
North Dakota.....	27.19	339	22.72	8	32	8	1.60	.70	1.70
Texas.....	9.09	384	6.99	38	30	36	.54	.79	.52
Florida.....	9.36	276	6.39	36	41	39	.55	.57	.48
Third Quartile...	19.03	435	11.72				1.12	.90	.88
Oklahoma.....	12.90	408	10.32	32	29	31	.77	.84	.77
New Mexico.....	9.27	348	7.48	37	31	35	.55	.72	.56
Virginia.....	6.77	268	6.19	41	42	40	.40	.55	.46
Louisiana.....	7.90	415	9.01	40	26	33	.47	.86	.67
Kentucky.....	7.98	337	6.04	39	33	41	.47	.70	.45
Tennessee.....	6.32	292	3.83	42	39	42	.37	.60	.29
North Carolina.....	4.40	200	2.39	46	48	44	.26	.41	.18
Georgia.....	5.32	250	3.64	44	44	43	.31	.52	.27
Arkansas.....	5.99	284	1.88	43	40	47	.35	.59	.14
South Carolina.....	3.72	212	1.95	48	46	46	.22	.44	.15
Alabama.....	4.25	314	.59	47	37	48	.25	.65	.04
Mississippi.....	4.46	210	2.26	45	47	45	.26	.43	.17
Fourth Quartile...	6.61	295	4.28				.39	.61	.32

(a) Calculated from figures of *Commissioner of Education Report, 1911*, Vol. 2, p. 704, Col. 7, and p. 690, Col. 8.

(b) Calculated from figures of *Commissioner of Education Report, 1911*, Vol. 2, p. 704, Col. 3, and p. 689, Col. 4.

(c) Calculated from figures of *Commissioner of Education Report, 1911*, Vol. 2, p. 704, Col. 7 and 3, and p. 695, Col. 6.

provided 3.5 times as much educational support per child as the twelve poorest states.

The twelve richest states paid their teachers salaries 2.4 times as high as the twelve poorest states.

The twelve richest states provided for non-salary costs 3.5 times as much per pupil in

average daily attendance as the twelve poorest states.

As far as data are available it appears that both since and previous to the World War the richer states afforded their schools much more adequate financial support than the poorer states.

TABLE 16.—INDICATIONS OF FINANCIAL SUPPORT ACCORDED EDUCATION 1910, 1918, and 1922 (a)

(States arranged according to their ability to support education)

States	Indices of total expenditures per child			Indices of teachers' average salaries			Indices of non-salary costs		
	1910	1918	1922	1910	1918	1922	1910	1918	1922
1	2	3	4	5	6	7	8	9	10
United States.....	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
California.....	1.99	2.04	2.31	1.89	1.64	1.59	2.03	1.40	2.09
Nevada.....	2.09	1.55	1.90	.97	1.38	1.15	3.93	1.28	1.51
New York.....	1.48	1.21	1.36	1.68	1.62	1.64	1.01	.88	1.14
Massachusetts.....	1.63	1.32	1.14	1.56	1.33	1.39	1.44	1.19	.95
Oregon.....	1.61	1.40	1.32	1.07	1.09	1.03	1.69	1.07	.94
Washington.....	2.39	1.52	1.66	1.43	1.47	1.27	2.65	1.44	1.54
Rhode Island.....	1.21	1.00	.88	1.26	1.24	1.21	1.27	1.19	.87
Connecticut.....	1.26	1.31	1.13	1.16	1.23	1.27	1.26	1.15	.94
New Jersey.....	1.61	1.48	1.43	1.51	1.41	1.44	1.90	1.61	1.56
Illinois.....	1.42	1.20	1.16	1.21	1.25	1.22	1.61	1.13	1.14
Wyoming.....	1.52	1.85	1.79	.91	.92	.86	1.38	1.23	1.67
Ohio.....	1.40	1.47	1.53	1.08	1.17	1.18	1.26	1.40	1.75
First Quartile.....	1.63	1.36	1.41	1.31	1.39	1.39	1.45	1.19	1.35
Michigan.....	1.13	1.51	1.44	.99	1.03	1.05	1.01	1.49	1.81
New Hampshire.....	1.05	1.15	.88	.68	.85	.87	.98	1.23	.93
Colorado.....	1.59	1.49	1.44	1.33	1.17	.96	1.30	1.42	1.33
Delaware.....	.67	.59	.84	.86	.87	1.04	.64	.51	.75
Pennsylvania.....	1.24	1.15	.85	1.14	1.09	1.07	1.52	1.42	.88
Arizona.....	1.20	1.92	1.33	1.69	1.49	1.34	1.14	1.64	1.77
Iowa.....	1.19	1.82	1.49	.62	.90	.80	.92	1.80	1.31
Maryland.....	.62	.60	.73	1.06	1.10	1.02	.49	.53	.76
Minnesota.....	1.32	1.43	1.50	1.00	1.01	.96	1.36	1.55	1.57
Maine.....	1.00	.90	.82	.51	.70	.67	.78	.72	.70
Nebraska.....	1.22	1.48	1.59	.85	.91	.89	1.13	1.47	1.50
South Dakota.....	1.33	1.26	1.56	.68	.77	.81	1.71	1.67	1.61
Second Quartile.....	1.13	1.30	1.16	.95	1.00	.96	1.22	1.43	1.23
Indiana.....	1.28	1.40	1.59	1.08	.96	1.08	1.04	1.33	1.90
Montana.....	1.85	3.22	1.67	1.33	1.07	.99	2.14	2.62	1.76
Kansas.....	1.15	1.25	1.33	.89	.81	.90	1.04	1.30	1.15
Wisconsin.....	.92	.91	1.05	.94	.82	1.09	.95	1.12	1.03
Vermont.....	1.21	1.08	.89	.55	.72	.71	1.06	1.05	.75
Missouri.....	.79	.92	.86	.91	1.01	.93	.75	.84	.74
Idaho.....	1.41	1.54	1.32	1.13	1.06	1.01	1.39	1.55	1.18
Utah.....	1.48	1.47	1.28	1.22	1.14	1.08	1.78	1.41	1.18
West Virginia.....	.68	.61	.74	.67	.65	.78	.49	.47	.58
North Dakota.....	1.60	1.61	1.34	.70	.91	.83	1.70	2.05	1.07
Texas.....	.54	.62	.65	.79	.76	.70	.52	.60	.64
Florida.....	.55	.63	.62	.57	.62	.55	.48	.76	.76
Third Quartile.....	1.12	1.00	1.00	.90	.86	.88	.88	1.03	.99
Oklahoma.....	.77	.70	.83	.84	.71	.85	.77	.83	.79
New Mexico.....	.55	1.11	.84	.72	.87	.91	.56	1.77	.92
Virginia.....	.40	.44	.54	.55	.60	.60	.46	.41	.66
Louisiana.....	.47	.37	.53	.86	.72	.78	.67	.40	.59
Kentucky.....	.47	.43	.36	.70	.60	.62	.45	.41	.24
Tennessee.....	.37	.40	.38	.60	.57	.55	.29	.33	.31
North Carolina.....	.26	.30	.46	.41	.47	.56	.18	.21	.43
Georgia.....	.31	.29	.26	.52	.60	.49	.27	.16	.19
Arkansas.....	.35	.32	.28	.59	.60	.63	.14	.17	.13
South Carolina.....	.22	.32	.30	.44	.49	.50	.15	.40	.24
Alabama.....	.25	.29	.29	.65	.53	.52	.04	.23	.26
Mississippi.....	.26	.24	.29	.43	.48	.38	.17	.05	.18
Fourth Quartile.....	.39	.39	.41	.61	.59	.59	.32	.34	.37

(a) The data in this table are taken from Tables 13, 14, and 15.

Economic Ability and Educational Efficiency

What relationship exists between the economic ability of a state to support education and the general educational efficiency of the state? Table 17 presents data pertinent to the consideration of this question. For each state figures are presented as follows:

1. The average number of days schools were kept open in 1922
2. Average number of days attended by each child enrolled in 1922
3. Percent of attendance in high school in 1922.
4. Percent of teachers normal graduates around 1922
5. Average number of years of school life on a basis of a 180-day year.

It is realized that it is impossible to measure exactly many of the values that are of major significance in determining the efficiency of a state school system, if educational efficiency is to be considered in its broadest aspects. It is conceivable that a state school system with poor attendance and untrained teachers might render a greater social service than one with good attendance and trained teachers.

Few would deny, however, other things being equal, that a state school system in which there is regularity of attendance over a reasonable period each year and in which trained teachers are found in the classrooms, is better equipped to render the service expected than is one in which these things are absent. Insofar as these factors contribute toward an effective school system, the indications of educational status given in Table 17 may be accepted as a measure of the school efficiency of the different states.

Table 17, as it stands, indicates greater school efficiency in the rich states than in the poor. Considering figures for each of the quartiles these statements may be made:

The twelve richest states, taken as a group, keep their schools open 39 days more each year than the twelve poorest states.

In the twelve richest states each child enrolled annually attends school 45 days more,

on the average, than those enrolled in the twelve poorest states.

In the twelve richest states, 16 percent of the children are enrolled in high school; in the twelve poorest states, 7 percent.

The children in the twelve richest states have a school life nearly twice as long, on the average, as in the twelve poorest states.

The percentage of teachers who are normal graduates in the twelve richest states is 72 percent; in the twelve poorest states, 26 percent.

There is a regular increase towards greater efficiency in each quartile as one progresses from the poorer to the richer groups.

Economic Ability and School Results

What relationship exists between the economic ability of the states to support education and the general level of educational attainment of the people of the states? In attempting to measure the general level of educational attainment of the people we at once encounter philosophical considerations, and concepts as yet unmeasured. This fact is recognized in presenting the data in Table 18. The figures of this table compare the states in these characteristics:

1. Percentage of white, native-born population classified as illiterate, in the 1920 Census
2. Percent that circulation of ten popular magazines of wide circulation is of population
3. Percent that 13 standard magazines of opinion is of population.

The final objective of education must be far beyond the ability to read and write and the desire to read. Nevertheless it is difficult to conceive of a people reaching a high state of educational attainment which in any considerable degree was unable to read and write and which failed to use that ability to keep in touch with the larger movements of civilization. We may look upon the data presented in Table 18 therefore as having to do with first essentials rather than final objectives in progressing towards a high standard of educational attainment. This point is further emphasized when it is realized that the 1920 federal census warns us that illiteracy figures should be interpreted as "rep-

TABLE 17.—INDICATIONS OF SCHOOL EFFICIENCY IN THE STATES

(States arranged according to ability to support education)

States	Average number of days schools were kept open 1922	Average number of days attended by each child enrolled in 1922	Percent of attendance in high school in 1922	Percent of teachers normal graduates	Average number of years of school life on basis of a 180-day year	Rank Col. 2	Rank Col. 3	Rank Col. 4	Rank Col. 5	Rank Col. 6
1	2	3	4	5	6	7	8	9	10	11
United States.....	164.0	130.6	12.3	46	6.92					
California.....	179.0	126.0	27.1	93	7.42	11	32	1	1	25.5
Nevada.....	169.3	137.1	17.3	65	7.64	24	24	7	12	21
New York.....	185.0	154.1	14.0	82	8.59	4	4	19	6	6
Massachusetts.....	180.0	149.2	16.4	88	9.08	9	11	9.5	4	1
Oregon.....	168.6	147.0	18.4	79	8.56	26	13	4	8	7
Washington.....	177.8	140.3	18.1	50	7.86	13	19	5	16	15
Rhode Island.....	194.6	162.7	11.0	87	7.96	1	1	32	5	12
Connecticut.....	184.3	152.1	13.4	90	6.84	5	6	21.5	2	31
New Jersey.....	188.7	156.0	11.1	80	8.81	3	2	31	7	3
Illinois.....	180.4	153.0	13.1	41	8.36	7	5	23	24	9
Wyoming.....	167.2	130.4	12.0	(e)	7.08	29	31	26	(e)	28
Ohio.....	174.4	149.8	16.2	42	7.87	15	10	11.5	22	14
First Quartile.....	179.1	146.5	15.7	72	8.01					
Michigan.....	194.1	155.6	13.4	25	7.79	2	3	21.5	36.5	17
New Hampshire.....	171.0	147.3	14.4	48	8.51	19	12	18	17	8
Colorado.....	174.1	123.2	16.2	56	6.89	16	33	11.5	14.5	30
Delaware.....	180.2	137.5	11.8	44	7.42	8	23	28	19.5	25.5
Pennsylvania.....	179.3	151.9	11.4	67	7.95	10	7	29.5	10.5	13
Arizona.....	170.0	131.0	11.4	89	4.94	22	30	29.5	3	42
Iowa.....	178.7	143.5	26.0	30	8.68	12	15	2	33	5
Maryland.....	181.3	143.3	8.6	46	7.00	6	16	36	18	29
Minnesota.....	169.6	142.5	13.5	56	7.45	23	17	20	14.5	24
Maine.....	174.0	150.3	17.2	40	8.78	17	8	8	26	4
Nebraska.....	171.0	140.1	18.2	35	7.66	19	20	16	28	19.5
South Dakota.....	168.1	136.3	12.5	34	6.80	27	26	24	30.5	33
Second Quartile.....	176.0	141.8	14.3	48	7.49					
Indiana.....	163.7	137.8	16.4	40	7.31	33	22	9.5	26	27
Montana.....	171.0	139.0	15.3	34	7.55	19	21	15	30.5	23
Kansas.....	165.0	135.1	17.5	42	7.74	30	37	6	22	18
Wisconsin.....	177.7	150.1	15.1	44	8.30	14	9	17	19.5	10
Vermont.....	164.9	145.1	20.0	29	7.85	31	14	3	34	16
Missouri.....	167.7	132.0	12.0	34	7.58	28	29	26	30.5	22
Idaho.....	169.0	132.9	15.4	42	8.08	25	28	14	22	11
Utah.....	164.3	140.5	16.0	69	8.97	32	18	13	9	2
West Virginia.....	143.1	115.2	7.1	18	5.69	38	36	41	41.5	35.5
North Dakota.....	147.2	136.5	12.0	26	7.66	37	25	26	35	19.5
Texas.....	136.5	112.4	10.0	34	5.74	43	37.5	33	30.5	34
Florida.....	136.0	103.1	7.4	1	5.26	44	40	39.5	47	39
Third Quartile.....	158.8	131.6	13.7	34	7.31					
Oklahoma.....	160.0	108.3	9.7	22	5.69	34	39	34	38	35.5
New Mexico.....	170.5	117.5	9.1	18	6.83	21	34	35	41.5	32
Virginia.....	159.1	116.1	9.1	40	5.37	35	35	44	26	38
Louisiana.....	148.6	112.4	8.3	67	5.07	36	37.5	37	10.5	41
Kentucky.....	125.0	92.3	5.9	17	4.35	47	47	45	43	45
Tennessee.....	140.6	99.8	6.9	20	5.45	39	43	43	39.5	37
North Carolina.....	139.0	100.7	5.2	20	5.10	41	42	47	39.5	40
Georgia.....	140.0	102.6	7.4	25	4.84	40	41	39.5	36.5	43
Arkansas.....	130.4	94.1	7.0	8	4.63	46	46	42	45	44
South Carolina.....	110.5	79.8	5.0	60	4.24	48	48	48	13	46
Alabama.....	130.8	95.8	8.0	10	4.05	45	44	38	44	48
Mississippi.....	136.8	94.8	5.4	4	4.22	42	45	46	46	47
Fourth Quartile.....	140.9	101.2	7.0	26	4.99					

(a) These figures from column 5, Table 12. *Supplement to American School Board Journal*, December, 1924.(b) These figures from column 4, Table 12. *Supplement to American School Board Journal*, December, 1924.(c) These figures from column 3, Table 12. *Supplement to American School Board Journal*, December, 1924.(d) These figures from *Research Bulletin*, Volume I, Number 4. September, 1923. Table 6, column 6, p. 265.

(e) Data not available.

(f) These figures were taken from column 5, Table 11, page 13, *Statistical Survey of Education*, 1921-1922, U. S. Bureau of Education, 1924, Number 38.

TABLE 18.—INDICATIONS OF LEVEL OF EDUCATIONAL ATTAINMENT IN THE STATES

(States arranged according to ability to support education)

States	Percent- age of white native- born pop- ulation illiterate in 1920 (a)	Percent that circ- ulation of ten popular magazines is of population in 1922 (b)	Percent that circ- ulation of thirteen standard magazines of opinion is of pop- ulation in 1922 (b)	Rank in percent- age literate (c)	Rank in circulation of ten largest popular magazines (d)	Rank in circulation of thirteen magazines of opinion (e)
1	2	3	4	5	6	7
California.....	0.4	25.83	2.34	14	1	1
Nevada.....	0.4	21.25	1.94	8	4	2
New York.....	0.5	14.66	1.53	16	22	10
Massachusetts.....	0.4	17.89	1.62	7	8	8
Oregon.....	0.4	24.99	1.76	9	2	5
Washington.....	0.3	24.10	1.63	1	3	7
Rhode Island.....	0.7	15.15	1.23	22	20	15
Connecticut.....	0.4	17.27	1.61	12	9	9
New Jersey.....	0.6	13.60	1.31	18	27	12
Illinois.....	0.8	14.43	1.07	23	23	23
Wyoming.....	0.3	20.85	1.78	3	5	4
Ohio.....	0.9	16.84	1.21	25	11	16
First Quartile.....	0.5	18.91	1.59			
Michigan.....	0.7	16.43	1.15+	19	14	18
New Hampshire.....	0.7	16.48	1.84	21	13	3
Colorado.....	1.4	17.97	1.29+	7	7	13
Delaware.....	0.8	12.32	1.65	30	33	32
Pennsylvania.....	0.8	13.34	1.00	24	20	20
Arizona.....	2.1	15.28	1.11	33	19	29
Iowa.....	0.5	16.33	.90+	15	15	28
Maryland.....	1.8	10.67	.93	32	34	26
Minnesota.....	0.4	15.54	1.08	13	18	21
Maine.....	1.6	15.99	1.37	29	16	11
Nebraska.....	0.4	15.81	.96	11	17	25
South Dakota.....	0.4	13.92	.89	10	24	30
Second Quartile.....	1.1	15.01	1.11			
Indiana.....	1.3	14.77	.80	26	21	34
Montana.....	0.3	18.56	1.29-	2	6	14
Kansas.....	0.6	13.60+	.90-	17	26	29
Wisconsin.....	0.7	13.04	.91	20	31	27
Vermont.....	1.5	16.52	1.67	28	12	6
Missouri.....	2.0	12.47	.87	31	32	31
Idaho.....	0.3	17.09	1.15-	4	10	19
Utah.....	0.3	13.08	1.16	5	30	17
West Virginia.....	4.6	9.00	.64	39	38	36
North Dakota.....	0.4	13.59	.81	6	28	33
Texas.....	3.0	9.43	.50	36	36	40
Florida.....	2.9	13.61	1.07	35	25	22
Third Quartile.....	1.5	13.73	.98			
Oklahoma.....	2.3	10.05	.62	34	35	37
New Mexico.....	11.6	9.42	.67	48	37	35
Virginia.....	5.9	8.02	.58	41	39	38
Louisiana.....	10.5	6.49	.51	47	40	39
Kentucky.....	7.0	5.97	.39	44	41	42
Tennessee.....	7.3	5.94	.33+	45	42	44
North Carolina.....	8.2	5.86	.42	46	43	41
Georgia.....	5.4	5.12	.33-	40	46	45
Arkansas.....	4.5	5.69	.27	38	44	47
South Carolina.....	6.5	4.77	.33+	43	47	43
Alabama.....	6.3	4.36	.29	42	48	46
Mississippi.....	3.6	5.15	.23	37	45	48
Fourth Quartile.....	6.6	6.40	.41			

(a) These figures from the United States Census, 1920.

(b) Figures in columns 3 and 4 were taken from Bulletin of the Elementary School Principals, Volume III, No. 2, January, 1924, p. 95. The thirteen standard magazines included: American Review of Reviews; Asia; Current Opinion; Judge; North American Review; Popular Science; Scientific American; Scribner's Magazine; The Atlantic Monthly; The Nation; The Outlook; Vanity Fair; and World's Work.

The ten magazines of largest general circulation included: The Saturday Evening Post; The Ladies' Home Journal; The Pictorial Review; The American Magazine; The Woman's Home Companion; The Cosmopolitan; The Literary Digest; The Country Gentleman; The National Geographic Magazine; and The Red Book Magazine.

(c) These figures are taken from Research Bulletin of the National Education Association, Vol. I, No. 4, September, 1923, Table 18, column 6, p. 290.

(d) These ranks are based on figures in column 3.

(e) These ranks are based on figures in column 4.

resenting only those persons who have had no schooling whatever."¹

Insofar as the meager data of Table 18 are an indication of the relative educational attainment of the states, we are justified in claiming a clear-cut superiority for the richer states. Illiteracy among the white, native-born population is thirteen times as high in the poorest as in the richest states. People in the richest states do three times as much reading as those in the poorest, if magazine circulation is accepted as a criterion.

Economic Ability and Effort Made to Support Education

In this section effort made by a state to support education is defined as the percentage of its economic power annually allotted for school maintenance. Table 19 presents data pertinent to the question: What agreement exists between the economic ability of a state to provide for education and the effort it makes to support education? This table shows the percentage relationship between each state's wealth, income, and index of economic resources, and the expenditures for education in 1922; the states being arranged in the order of their ability to support education as determined in Chapter III.

The indices of columns 7 to 11 put the percentages given in the first columns of the table on a comparable basis. In column 7, for example, the percentage relationship between the nation's wealth and school expenditures (.51) is given the value 1.00. California expended .64 percent of its wealth for education. This figure is given the value 1.25 in column 7, since it is 25 percent greater than the corresponding figure for the United States. States with educational expenditures constituting 1.02 percent (2 times .51) of wealth put forth an effort represented by the value 2.00, and states expending .225 percent of their wealth (one-half of .51) put forth an effort valued at .50. The same method is employed in columns 7 to 11 to compare the

efforts of the states to support education. In each case, the percentage relationship of the nation's various measures of economic power to school costs is given the value 1.00. With this as a reference point, each state is rated as to its effort to support education according to the various measures of economic power.

Probably the most striking indication of Table 19 is the degree of agreement among the states as to the percentage relationship between economic resources and expenditures for schools.

Chart XIV shows for each state the percentage of its index of economic resources (average yearly income plus one-tenth the value of wealth) expended for education. The extremes in this chart are North Dakota and Georgia.² The percentage given on the chart for North Dakota (2.88) is 2.94 times that given for Georgia (.98). It is interesting to compare this ratio between the extreme states with that as to ability to support education as indicated by the index of economic resources. The richest state is 6.11 times as able to support education as the poorest.

This chart shows that seven of the twelve richest states, those at the top of the chart, expend a smaller percentage of their economic power to support education than is expended in the United States as a whole. Nine of the twelve poorest states are below the average.

Table 19 indicates little variation in the four quartiles in the percentage of economic resources going to education, no matter what measure of economic power is used. According to the average of the indices of Table 19, column 12, five of the twelve states of the first quartile are making less effort to support education than are the states of the fourth quartile taken as a group. Again considering the indices of column 12, the states of the second and third quartiles, taken as groups, both slightly exceed the states of the first and fourth quartiles in the percentage of economic resources devoted to education.

¹ 1920 Census, Vol. 3, p. 10.

² In considering the position of individual states, the warnings of Chapter I should be kept in mind. The income of North Dakota, for example, from 1919 and 1921 is probably not representative. If such is the case, the effect would be to indicate a greater effort to support education, than is actually the case. Uncritical acceptance of data in this study, as indicating conditions in single states, is unjustified. All conclusions for individual states in which income data enter will continue to be highly tentative until income figures are available by states over a considerable period of years.

TABLE 19.—PERCENTAGE OF WEALTH AND INCOME EXPENDED FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS (a)

(States ranked according to ability to support education)

States	Percent of wealth expended in 1922	Percent of average total income expended in 1922	Percent of average current income expended in 1922	Percent of index of economic resources (total average income plus 1/10 wealth) expended in 1922	Percent of index of economic resources (current average income plus 1/10 wealth) expended in 1922	Index of percent of wealth in 1922 expended (Col. 2) (b)	Index of percent of average total income expended (Col. 3)	Index of percent of average current income expended (Col. 4)	Index of percent of economic resources expended (Col. 5)	Index of percent of economic resources expended (Col. 6)	Average of indices in columns 7-11
1	2	3	4	5	6	7	8	9	10	11	12
United States . . .	.51	2.13	2.33	1.50	1.60	1.00	1.00	1.00	1.00	1.00	1.000
California	.64	2.43	2.80	1.76	1.94	1.25	1.14	1.20	1.17	1.21	1.194
Nevada	.37	2.57	2.39	1.51	1.45	.73	1.21	1.03	1.01	.91	.978
New York	.50	1.63	1.79	1.23	1.32	.98	.77	.77	.82	.83	.834
Massachusetts . . .	.45	1.55	1.69	1.15	1.22	.88	.73	.73	.77	.76	.774
Oregon	.43	2.08	2.41	1.40	1.54	.84	.98	1.03	.93	.96	.948
Washington	.60	2.58	2.94	1.80	1.97	1.18	1.21	1.26	1.20	1.23	1.216
Rhode Island . . .	.37	1.30	1.42	.96	1.03	.73	.61	.61	.64	.64	.646
Connecticut	.40	1.85	2.00	1.27	1.34	.78	.87	.86	.85	.84	.840
New Jersey	.54	2.27	2.53	1.60	1.73	1.06	1.07	1.09	1.07	1.08	1.074
Illinois	.47	1.82	1.98	1.31	1.39	.92	.85	.85	.87	.87	.872
Wyoming	.75	3.31	3.00	2.29	2.14	1.47	1.56	1.29	1.53	1.34	1.438
Ohio	.63	2.75	2.93	1.91	2.00	1.24	1.29	1.26	1.27	1.25	1.262
First Quartile . . .	.52	1.98	2.17	1.43	1.53	1.02	.93	.93	.95	.96	.958
Michigan	.64	2.57	2.81	1.83	1.95	1.25	1.21	1.21	1.22	1.22	1.222
New Hampshire . .	.36	1.55	1.69	1.09	1.15	.71	.73	.73	.73	.72	.724
Colorado	.62	2.62	2.91	1.84	1.98	1.22	1.23	1.25	1.23	1.24	1.234
Delaware	.40	1.51	1.59	1.10	1.14	.78	.71	.68	.73	.71	.722
Pennsylvania . . .	.38	1.57	1.72	1.11	1.19	.75	.74	.74	.74	.74	.742
Arizona	.58	2.64	3.08	1.81	2.01	1.14	1.24	1.32	1.21	1.26	1.234
Iowa	.47	3.46	3.71	2.00	2.08	.92	1.62	1.59	1.33	1.30	1.352
Maryland	.37	1.33	1.43	.98	1.04	.73	.62	.61	.65	.65	.652
Minnesota	.61	3.21	3.86	2.11	2.37	1.20	1.51	1.66	1.41	1.48	1.452
Maine	.41	1.64	1.80	1.17	1.25	.80	.77	.78	.78	.78	.780
Nebraska	.58	3.68	4.34	2.25	2.48	1.14	1.73	1.86	1.49	1.55	1.554
South Dakota . . .	.53	3.70	4.67	2.19	2.49	1.04	1.74	2.00	1.46	.56	1.560
Second Quartile . .	.49	2.25	2.50	1.54	1.65	.96	1.06	1.07	1.03	1.03	1.030
Indiana	.72	3.58	3.76	2.39	2.47	1.41	1.68	1.61	1.59	1.54	1.566
Montana	.67	5.00	4.16	2.87	2.57	1.31	2.35	1.79	1.91	1.61	1.794
Kansas	.55	3.03	3.37	1.93	2.09	1.08	1.42	1.45	1.30	1.31	1.312
Wisconsin	.51	2.28	2.55	1.58	1.70	1.00	1.07	1.09	1.05	1.06	1.054
Vermont	.49	1.84	2.04	1.34	1.44	.96	.86	.88	.89	.90	.898
Missouri	.41	2.00	2.11	1.34	1.39	.80	.94	.91	.89	.87	.882
Idaho	.69	3.19	3.79	2.18	2.44	1.35	1.50	1.63	1.45	1.53	1.492
Utah	.68	3.71	4.02	2.40	2.53	1.33	1.74	1.72	1.60	1.58	1.594
West Virginia . . .	.40	2.34	2.55	1.48	1.56	.78	1.10	1.09	.99	.98	.986
North Dakota . . .	.63	4.74	5.33	2.70	2.88	1.23	2.23	2.29	1.80	1.80	1.870
Texas	.54	1.92	2.16	1.42	1.54	1.06	.90	.93	.95	.96	.960
Florida	.40	2.03	2.35	1.35	1.48	.78	.95	1.01	.90	.93	.914
Third Quartile . . .	.54	2.58	2.81	1.75	1.85	1.06	1.21	1.21	1.17	1.16	1.162
Oklahoma	.76	2.73	3.05	2.01	2.18	1.40	1.28	1.31	1.34	1.36	1.356
New Mexico	.67	2.99	3.10	2.06	2.12	1.31	1.40	1.33	1.37	1.33	1.348
Virginia	.45	2.07	2.24	1.41	1.49	.88	.97	.96	.94	.93	.936
Louisiana	.48	2.01	2.16	1.42	1.49	.94	.94	.93	.95	.93	.938
Kentucky	.40	1.53	1.50	1.10	1.09	.78	.72	.64	.73	.68	.710
Tennessee	.36	1.74	1.82	1.17	1.21	.71	.82	.78	.78	.76	.770
North Carolina . .	.49	2.30	2.44	1.56	1.63	.96	1.08	1.05	1.04	1.02	1.030
Georgia	.35	1.39	1.37	1.00	.98	.69	.65	.59	.67	.61	.642
Arkansas	.34	1.56	1.56	1.07	1.07	.67	.73	.67	.71	.67	.690
South Carolina . .	.40	1.75	1.71	1.22	1.20	.78	.82	.73	.81	.75	.778
Alabama	.44	1.68	1.77	1.22	1.26	.86	.79	.76	.81	.79	.802
Mississippi	.43	1.87	1.80	1.31	1.32	.84	.88	.81	.87	.83	.846
Fourth Quartile . .	.46	1.94	2.01	1.36	1.40	.90	.91	.86	.91	.88	.892

(a) The percentages of this table are based upon the data as to wealth, income and indices of economic resources of Table 5 and upon the expenditures for public elementary schools of Bulletin 1924, No. 31, U. S. Bureau of Education, p. 32-33, Table 25.

(b) The indices of column 7, are obtained as follows: Each percent of column 2 is divided by .51, (the percentage of wealth of 1922, expended for education in 1922 in the country as a whole). This gives the value of 1.00 in column 7 for the country as a whole and corresponding values of more or less than 1.00 for each state according to whether the state expends more or less than .51% of its wealth for education. Thus a state expending 1.02 percent ($2 \times .51\%$) of its wealth would be rated 2.00 in column 7 and a state expending .255 percent ($\frac{1}{2}$ of .51%) of its wealth for education would be rated .50. The indices of columns 8 to 11 are similarly derived from the percentages of columns 3 to 6.

EFFORT MADE to SUPPORT PUBLIC EDUCATION

Per Cent of Index of Economic Resources Expended for Elementary and Secondary Schools in 1922 - States Arranged According to Ability to Support Education



Research Division
National Education Assn.

As far as the data of Table 19 indicate, there do not exist differences in effort made to support education between the rich and the poor states, comparable to the differences of these states in other school characteristics previously revealed in this chapter. The rich states as a class appear to expend approximately the same percent of their economic power for schools as the poor states.

The statements just preceding are based wholly upon data as to public school support. It was thought that parochial and private school enrolment might be responsible for the fact that wealthy states such as New York and Rhode Island seem to devote smaller per-

centages of their economic resources to education than the average for the twelve poorest states of the union. Table 20, below, was prepared with this factor in mind. It reveals that, according to the best data available, the factor of parochial and private school attendance is of sufficient significance in some states to justify special consideration. For example, in Rhode Island 20.28 percent of the total elementary and secondary school enrolment is in private or parochial schools, whereas but 2.11 percent of total enrolment is found in these schools in the twelve poorest states.

TABLE 20.—PERCENT OF INDEX OF ECONOMIC RESOURCES EXPENDED FOR PUBLIC AND PRIVATE SCHOOLS

States	Enrolment in elementary and secondary schools, 1921-1922			Percent that public school enrolment is of total enrolment	Percent of index of economic resources for public schools	Estimated percent of index of economic resources for public and private schools
	Public schools	Private and parochial schools	Total			
1	2	3	4	5	6	7
United States.....	23,169,686	1,569,029	24,765,715	93.56	1.60	1.71
Twelve states with highest ability to support education:						
California.....	838,723	41,666	880,389	95.27	1.94	2.04
Nevada.....	14,406	355	14,761	97.60	1.45	1.49
New York.....	1,823,130	120,491	1,943,621	93.80	1.32	1.41
Massachusetts.....	698,268	139,154	837,422	83.38	1.22	1.46
Oregon.....	164,360	12,209	176,669	93.09	1.54	1.65
Washington.....	301,800	17,453	319,253	94.53	1.97	2.08
Rhode Island.....	101,643	25,853	127,496	79.72	1.03	1.29
Connecticut.....	283,759	57,437	341,196	83.17	1.34	1.61
New Jersey.....	628,689	41,873	670,562	93.76	1.73	1.85
Illinois.....	1,249,208	195,552	1,444,760	86.46	1.39	1.61
Wyoming.....	47,988	1,183	49,171	97.60	2.14	2.19
Ohio.....	1,120,293	88,345	1,208,638	92.69	2.00	2.16
First Quartile.....	606,031	61,798	667,828	90.75	1.53	1.69
Twelve states with lowest ability to support education:						
Oklahoma.....	637,299	2,620	639,919	99.59	2.18	2.19
New Mexico.....	80,929	4,267	85,196	94.99	2.12	2.23
Virginia.....	546,035	12,529	558,564	97.76	1.49	1.52
Louisiana.....	390,324	4,430	394,754	98.88	1.48	1.50
Kentucky.....	581,313	15,460	596,773	97.41	1.09	1.12
Tennessee.....	642,126	23,202	665,328	96.51	1.21	1.25
North Carolina.....	753,698	23,441	777,139	96.98	1.63	1.68
Georgia.....	730,873	13,400	744,273	98.20	.98	1.00
Arkansas.....	509,351	2,122	511,473	99.59	1.07	1.07
South Carolina.....	479,309	9,100	488,409	98.14	1.20	1.22
Alabama.....	592,610	21,025	613,635	96.57	1.26	1.30
Mississippi.....	560,833	8,740	569,573	98.47	1.32	1.34
Fourth Quartile.....	542,058	11,695	553,753	97.80	1.40	1.43

Read table thus: Of the 880,389 (Column 4) children enrolled in California schools, 838,723 (Column 2), or 95.27 percent (Column 5), are enrolled in public schools; 41,666 (Column 3) are enrolled in private schools. The percent of the index of economic resources expended for public schools in California is 1.94 percent (Column 6). This last figure represents expenditures for public schools only, or expenditures for but 95.27 percent of total enrolment. This figure (1.94) has to be increased to 2.04 if it is to be indicative of costs for both public and private schools. This is based on the assumption that the cost per pupil enrolled in public schools and in private and parochial schools are the same. Similarly read data for other states.

Columns 2, 3, and 4 from *Statistics of State School Systems, 1921-1922*, U. S. Bureau of Education Bulletin, 1924, No. 31.

Column 5 is obtained by dividing column 2 by column 4.

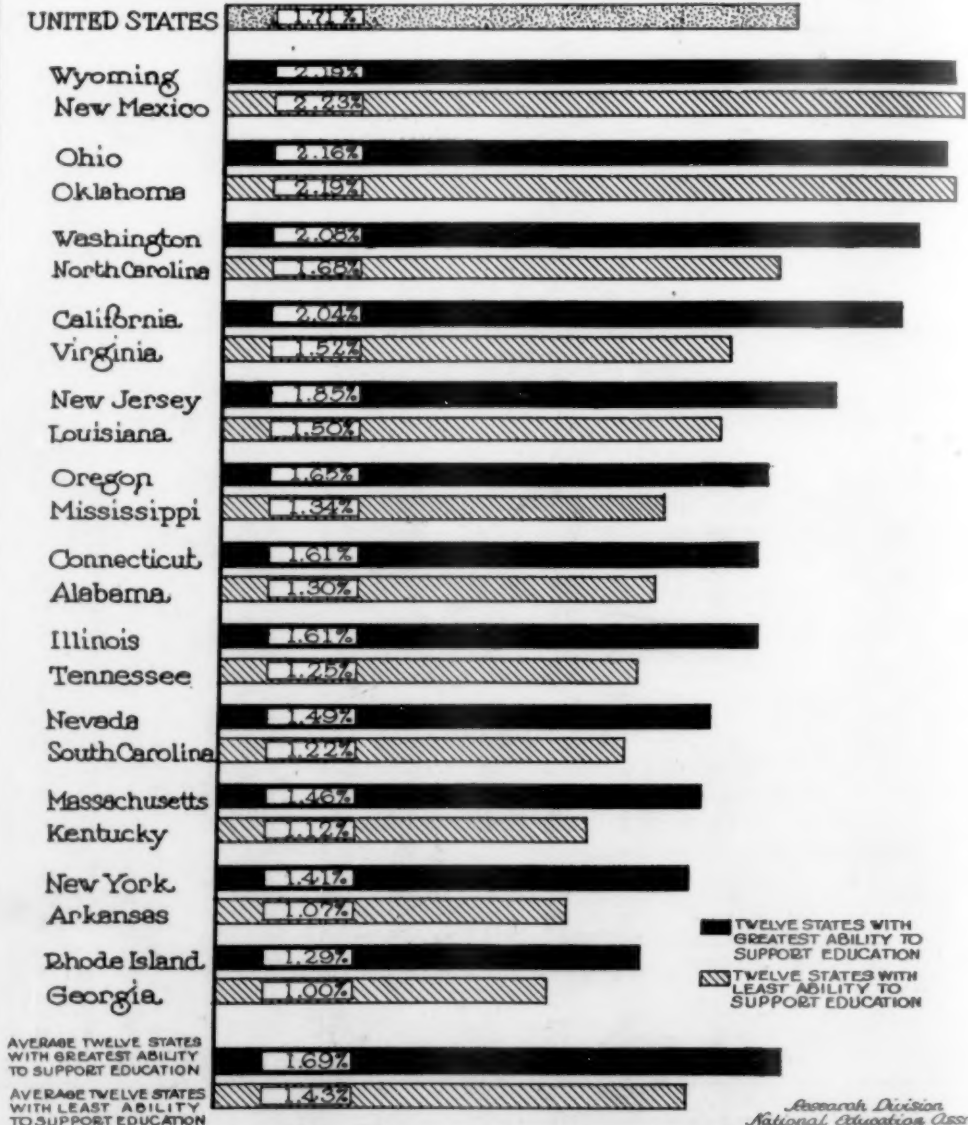
Column 6 from Table 19, column 6.

Column 7 is obtained by dividing figures in column 6 by those of column 5, and multiplying the result by 100.

CHART XV

EFFORT MADE TO SUPPORT EDUCATION BY TWELVE RICHEST AND TWELVE POOREST STATES ~ 1922

(COMPARISON OF PERCENT OF INDEX OF ECONOMIC RESOURCES EXPENDED FOR PUBLIC & PRIVATE SCHOOLS)



Read chart thus: of the twelve richest states Wyoming expends the largest percent of its index of economic resources (2.19) for public and private, elementary and secondary schools; of the twelve poorest states New Mexico expends the largest percent of its index of economic resources (2.23) for public and private schools; rich and poor states are similarly paired as to rank in percent of index of resources expended for education.

In Table 20, an attempt is made to give the factor of private and parochial school enrolment proper weight. It is assumed that the economic cost per pupil enrolled in private and parochial schools is the same as in public schools. If such is the case, the figures as to the percentage of the index of economic resources devoted to education would become those of column 7, Table 20. Chart XV

makes it possible to compare the twelve richest and the twelve poorest states as to the percent of the index of economic resources devoted to education, after the suggested corrections have been made as to private and parochial school attendance. According to this chart, the twelve richest states devote 1.69 percent and the twelve poorest states

TABLE 21.—PERCENT OF WEALTH EXPENDED FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS, 1880 TO 1922

States	Percent of wealth expended in					Indices of percent of wealth expended in				
	1880	1890	1900	1912	1922	1880	1890	1900	1912	1922
I	2	3	4	5	6	7	8	9	10	11
United States.....	.181	.216	.244	.260	.503	1.00	1.00	1.00	1.00	1.00
California.....	.213	.205	.215	.281	.622	1.18	0.95	0.88	1.08	1.24
Nevada.....	.141	.090	.118	.138	.309	0.78	0.42	0.48	0.53	0.61
New York.....	.163	.205	.267	.226	.495	0.90	0.95	1.09	0.87	0.98
Massachusetts.....	.190	.296	.317	.353	.442	1.05	1.37	1.30	1.36	0.88
Oregon.....	.199	.137	.252	.296	.399	1.10	0.63	1.03	1.14	0.79
Washington.....	.182	.126	.304	.330	.579	1.01	0.58	1.25	1.27	1.15
Rhode Island.....	.132	.176	.218	.244	.371	0.73	0.81	0.89	0.94	0.74
Connecticut.....	.181	.258	.266	.262	.404	1.00	1.19	1.09	1.01	0.80
New Jersey.....	.144	.231	.242	.339	.536	0.80	1.07	0.99	1.30	1.07
Illinois.....	.219	.230	.255	.221	.464	1.21	1.06	1.05	0.85	0.92
Wyoming.....	.053	.133	.090	.280	.519	0.29	0.62	0.37	1.08	1.03
Ohio.....	.221	.268	.266	.316	.631	1.22	1.24	1.09	1.22	1.25
First Quartile.....	.170	.196	.234	.274	.481	0.94	0.91	0.96	1.05	0.96
Michigan.....	.176	.255	.275	.316	.638	0.97	1.18	1.13	1.22	1.27
New Hampshire.....	.156	.260	.223	.278	.355	0.86	1.20	0.91	1.07	0.71
Colorado.....	.165	.147	.298	.282	.600	0.91	0.68	1.22	1.08	1.19
Delaware.....	.152	.157	.214	.198	.394	0.84	0.73	0.88	0.76	0.78
Pennsylvania.....	.149	.209	.231	.262	.380	0.82	0.97	0.95	1.01	0.76
Arizona.....	.149	.096	.114	.289	.538	0.82	0.44	0.47	1.11	1.07
Iowa.....	.261	.279	.252	.190	.471	1.44	1.29	1.03	0.73	0.94
Maryland.....	.184	.176	.213	.185	.369	1.02	0.81	0.87	0.71	0.73
Minnesota.....	.168	.247	.224	.280	.611	0.93	1.14	0.92	1.08	1.21
Maine.....	.209	.271	.251	.310	.412	1.15	1.25	1.03	1.19	0.82
Nebraska.....	.288	.265	.271	.235	.577	1.59	1.23	1.11	0.90	1.15
South Dakota.....	(a)	.282	.291	.310	.532	.....	1.31	1.19	1.19	1.06
Second Quartile.....	.187	.220	.238	.261	.490	1.03	1.02	0.98	1.00	0.97
Indiana.....	.267	.250	.314	.307	.718	1.48	1.16	1.29	1.18	1.43
Montana.....	.197	.080	.150	.296	.629	1.09	0.37	0.61	1.14	1.25
Kansas.....	.239	.276	.239	.243	.548	1.32	1.28	0.98	0.93	1.09
Wisconsin.....	.191	.207	.228	.272	.510	1.06	0.96	0.93	1.05	1.01
Vermont.....	.148	.268	.326	.360	.490	0.82	1.24	1.34	1.38	0.97
Missouri.....	.235	.227	.241	.257	.411	1.30	1.05	0.99	0.99	0.82
Idaho.....	.131	.081	.145	.511	.623	0.72	0.38	0.59	1.97	1.24
Utah.....	.116	.113	.265	.455	.649	0.64	0.52	1.09	1.75	1.29
West Virginia.....	.202	.273	.305	.207	.398	1.12	1.26	1.25	0.80	0.79
North Dakota.....	.208	.186	.281	.258	.625	1.15	0.86	1.15	0.99	1.24
Texas.....	.125	.151	.192	.227	.533	0.69	0.70	0.79	0.87	1.06
Florida.....	.096	.133	.215	.249	.400	0.53	0.62	0.88	0.96	0.80
Third Quartile.....	.180	.187	.242	.304	.545	0.99	0.87	0.99	1.17	1.08
Oklahoma.....	.....	.....	.085	.244	.763	.....	.....	0.35	0.94	1.52
New Mexico.....	.059	.037	.128	.225	.606	0.33	0.17	0.52	0.87	1.20
Virginia.....	.134	.186	.181	.219	.434	0.74	0.86	0.74	0.84	0.86
Louisiana.....	.108	.165	.139	.232	.482	0.60	0.76	0.57	0.89	0.96
Kentucky.....	.119	.183	.223	.294	.395	0.66	0.85	0.91	1.13	0.79
Tennessee.....	.106	.172	.183	.294	.358	0.59	0.80	0.75	1.13	0.71
North Carolina.....	.082	.122	.139	.224	.486	0.45	0.56	0.57	0.86	0.97
Georgia.....	.078	.140	.212	.236	.346	0.43	0.65	0.87	0.91	0.69
Arkansas.....	.100	.223	.227	.223	.340	0.55	1.03	0.93	0.86	0.68
South Carolina.....	.101	.112	.184	.189	.398	0.56	0.52	0.75	0.73	0.79
Alabama.....	.117	.143	.119	.184	.427	0.65	0.66	0.49	0.71	0.85
Mississippi.....	.235	.244	.248	.227	.431	1.30	1.13	1.02	0.87	0.86
Fourth Quartile.....	.113	.144	.172	.233	.456	0.62	0.67	0.71	0.90	0.91

These data are based on Tables C and D. The basic figures for wealth by states include federal property, since data were not available for the years concerned, by which it could be differentiated from total wealth by states.

(a) For Dakota Territory see North Dakota.

1.43 percent of their index of economic resources to education. If the effort of the twelve poorest states to support education is given the value 1.00, the effort of the twelve richest states would be 1.18. Compare this with the relative ability of these states to support education. If the ability of the twelve poorest states to support education is given the value of 1.00, then the ability of the twelve richest states is 3.17.

If we accept the percentage of a state's economic resources devoted to education as a measure of its effort to support education, the data of Table 19 appear to justify the tentative conclusion that the variations in ability to support education, found between individual states and groups of states, are not matched by variations of equal magnitude as to effort made to support education. Some of the richest states devote a smaller percentage of their economic power to education than some of our poorest states. Whether a state has a relatively large or small amount of

economic power behind each child seems not to affect the percentage of its economic power going to the support of education. Speaking generally, there appears to be a tendency for all states, both rich and poor, to devote similar percentages of their economic resources to education.

Is this tentative conclusion valid only for 1922, or is it supported by data of preceding periods? The question cannot be answered by the same method as it was for 1922, since income figures by states are not available for years previous to 1919. Data on wealth, however, are available for past periods and are of some value, since there is considerable agreement between the economic power of a state as indicated by wealth and by income. Table 21 shows for 1880, 1890, 1900, 1912, and 1922 the percentage relationship of expenditures for public schools and value of tangible wealth.

These data tend to support the conclusion stated above. The data preceding 1912 for the

CHART XVI

COMPARISON OF EFFORT MADE TO SUPPORT PUBLIC EDUCATION BY RICH AND POOR STATES IN 1880, 1900 & 1922



Research Division
National Education Assn.

Read chart thus: In 1880 the twelve states most able to support education in 1922 expended a percentage of their wealth represented by the value 1.52. In comparison, in 1880, the twelve states least able to support education in 1922, expended a percentage of their wealth represented by the value 1.00. Similarly interpret data for 1900 and 1922.

southern states are an exception. Whether this is due to a relatively high degree of error present in the estimates of wealth for this year or to a real tendency, in this period, for the poorer states to devote a relatively low percentage of their economic resources to education, can only be conjectured.

Taken as a whole the data of Table 21 reveal no striking differences between the quartiles, particularly from 1900 on, as to the percentage of wealth devoted to education, and therefore tend to support the conclusion that the units of economic power behind each child in a state is of relatively minor significance in determining the percentage of its economic resources devoted to the support of education.

Chart XVI graphically presents data on this point. This chart, derived from Table 21, shows, for 1880, that if the percentage of wealth expended for schools by states of the lower quartile is given the value of 1.00, the states of the upper quartile expended a percentage of wealth equal to 1.52. Similar data are given for 1900 and 1922. Taken at its face value, Chart XVI seems to indicate a gradual tendency in the last forty-two years for the poorer states relatively to increase the effort they make to support education. This indication, however, may be specious rather than true. It is possible that the 1880 Census failed to list the wealth of the poorer states as completely as that of the richer, due to the existence of superior methods of accounting for wealth in the latter states. In short, Chart XVI should not be accepted uncritically. As it stands, however, it tends to support the hypothesis that in a given period different states tend to allot similar percentages of their economic power for school support whether they possess a relatively large or small number of units of economic power behind each child to be educated.

Should further investigation verify this hypothesis, it will deserve important consideration in studies of school finance. If in a given period the states may be expected to allot similar percentages of their income to education, then the large differences that exist between the provision for education in rich and poor states of the union may be looked upon as a relatively permanent condition.

Permanency of Differences in Ability to Support Education

In considering the differences that exist among the states in ability to support education, one wonders whether these differences are temporary or relatively permanent. These questions arise:

First, are the differences in ability to support education a peculiar phenomenon of this period, or have similar differences existed in the past and are they likely to continue in the future?

Second, is a state's relative position with respect to its economic ability to provide for education a permanent or a temporary one?

Unfortunately, income figures for the states are available only for the years 1919 to 1921. Such answers as may be given to these questions must therefore be based on the indications of the figures on wealth, which are available over a considerable period. Since, as has been shown, the economic resources of a state as indicated by wealth and by income are in reasonable agreement, conclusions based on the wealth of the states may be accepted as of some value.

Table 22 gives the amount of wealth per child, 5 to 14 years of age, in each state in 1880, 1900, and 1922; the states being arranged in the order of their ability to support education as given in Table 12. The indices of columns 8 to 10 show differences in ability to support education in 1880 and 1900 comparable to those of 1922.

The twelve states best able to support education in 1880, had 3.74 times as much wealth per child as the twelve states least able to support education in the same year. The similar ratio in 1900 was 4.13 to 1.00, and in 1922, 3.05 to 1.00. These facts, as well as others given for individual states in Table 22, indicate that the differences in ability to support education that existed in 1922 are not peculiar to this period. As to whether such differences are likely to continue in the future little more than a guess can be hazarded. The ratios of the amount of wealth per child in the poorest and the richest states in the years 1880, 1900, and 1922, may mean that since 1900 there has been a tendency for the differences in ability to support schools to de-

crease. Or it may be that this apparent tendency is the result of defects in the methods of taking the census of wealth in the early years.

Is the present position of a state with respect to its ability to provide for education

relatively permanent, or one which may change within a few years? The data of Table 22 are pertinent to the consideration of this question. The ranks of columns 5 to 7 of Table 22 indicate that the states that now have relatively large amounts of wealth per

TABLE 22.—WEALTH PER CHILD AGES 5-14 BY STATES IN 1880, 1900, AND 1922
(States arranged according to rank in ability to support education)

States	Wealth per child ages 5 to 14 inclusive (a)			Rank in wealth per child			Index of wealth per child (b)		
	1880	1900	1922	1880	1900	1922	1880	1900	1922
1	2	3	4	5	6	7	8	9	10
United States.....	\$3,571.96	\$5,180.34	\$14,241.49	.....	.....	.....	1.00	1.00	1.00
California.....	7,853.11	12,196.46	27,859.50	5	4	2	2.20	2.35	1.96
Nevada.....	16,679.14	27,193.58	43,445.02	2	1	1	4.67	5.25	3.05
New York.....	5,990.33	9,211.96	19,756.68	10	7	10	1.68	1.78	1.39
Massachusetts.....	7,876.40	8,980.19	18,721.54	4	8	13	2.21	1.72	1.31
Oregon.....	3,824.09	7,446.17	24,064.09	24	11	4	1.07	1.44	1.69
Washington.....	3,711.91	7,468.27	20,838.79	26	10	6	1.04	1.44	1.46
Rhode Island.....	7,462.27	9,225.84	17,167.84	6	6	21	2.09	1.78	1.21
Connecticut.....	6,385.87	7,375.63	20,255.59	9	13	8	1.79	1.42	1.42
New Jersey.....	5,194.38	7,366.75	19,202.71	12	14	12	1.45	1.42	1.35
Illinois.....	4,250.57	6,716.87	17,921.09	19	19	15	1.19	1.30	1.26
Wyoming.....	17,302.15	15,817.90	25,460.68	1	2	3	4.84	3.05	1.79
Ohio.....	4,256.60	5,900.12	17,490.31	18	22	19	1.19	1.14	1.23
First Quartile.....	5,500.34	8,007.94	19,738.10	.....	.....	.....	1.54	1.55	1.39
Michigan.....	4,261.53	5,187.43	16,417.60	17	30	22	1.19	1.00	1.15
New Hampshire.....	5,960.69	6,906.66	17,493.09	11	17	18	1.67	1.33	1.23
Colorado.....	7,996.27	8,838.33	17,522.58	3	9	17	2.24	1.71	1.23
Delaware.....	4,039.20	5,544.35	15,130.45	22	26	27	1.13	1.07	1.06
Pennsylvania.....	4,901.80	7,106.20	16,045.75	13	15	23	1.37	1.37	1.13
Arizona.....	6,452.63	10,246.01	18,624.72	8	5	14	1.81	1.98	1.31
Iowa.....	4,206.15	6,787.44	22,471.42	20	18	5	1.18	1.31	1.58
Maryland.....	3,747.35	5,087.13	14,072.98	25	31	32	1.05	.98	.99
Minnesota.....	4,138.60	6,138.10	17,713.69	21	21	16	1.16	1.18	1.24
Maine.....	3,935.28	5,516.96	14,167.22	23	27	31	1.10	1.06	.99
Nebraska.....	3,439.16	6,388.77	19,509.76	28	20	11	.96	1.23	1.37
South Dakota.....	(c)	5,563.60	20,746.98	.....	25	7	.....	1.07	1.46
Second Quartile.....	4,483.64	6,618.84	17,201.57	.....	.....	.....	1.26	1.28	1.21
Indiana.....	3,395.21	4,842.35	15,784.82	29	33	24	.95	.93	1.11
Montana.....	7,158.20	13,904.49	19,956.63	7	3	9	2.00	2.68	1.40
Kansas.....	2,916.81	5,689.67	17,181.53	31	24	20	.82	1.10	1.21
Wisconsin.....	3,536.84	4,977.31	14,643.70	27	32	29	.99	.96	1.03
Vermont.....	4,459.14	5,319.10	12,758.76	15	29	34	1.25	1.03	.90
Missouri.....	2,746.88	4,518.67	14,820.29	32	34	28	.77	.87	1.04
Idaho.....	4,680.44	7,398.21	15,672.29	14	12	25	1.31	1.43	1.10
Utah.....	2,920.38	5,771.57	14,201.99	30	23	30	.82	1.11	1.00
West Virginia.....	2,059.20	2,838.22	13,422.28	33	37	33	.58	.55	.94
North Dakota.....	(c) 4,323.77	6,979.64	15,372.46	16	16	26	1.21	1.35	1.08
Texas.....	1,882.26	2,847.41	8,812.70	35	36	38	.53	.55	.62
Florida.....	1,622.28	2,708.69	11,208.74	39	38	35	.45	.52	.79
Third Quartile.....	2,845.10	4,421.81	13,412.41	.....	.....	.....	.80	.85	.94
Oklahoma.....	.....	(d) 3,908.12	7,842.88	.....	35	39	.....	.75	.55
New Mexico.....	1,684.72	5,514.59	9,759.70	37	28	36	.47	1.06	.69
Virginia.....	1,741.38	2,388.72	8,907.89	30	40	37	.49	.46	.63
Louisiana.....	1,517.20	2,256.56	7,722.47	40	41	40	.42	.43	.54
Kentucky.....	2,030.50	2,600.69	6,410.77	34	39	43	.57	.50	.45
Tennessee.....	1,657.58	1,881.29	7,512.60	38	42	41	.46	.38	.53
North Carolina.....	1,229.43	1,367.55	6,735.53	43	46	42	.34	.26	.47
Georgia.....	1,417.83	1,582.71	5,211.77	41	45	46	.40	.30	.37
Arkansas.....	1,264.66	1,707.30	5,777.45	42	43	44	.35	.33	.41
South Carolina.....	1,163.50	1,317.54	5,240.83	45	45	45	.33	.25	.37
Alabama.....	1,218.18	1,596.04	4,860.48	44	44	47	.34	.31	.34
Mississippi.....	1,092.35	1,324.44	4,616.45	46	47	48	.31	.25	.32
Fourth Quartile.....	1,470.69	1,937.17	6,472.77	.....	.....	.....	.41	.37	.45

(a) The data of columns 2 to 4 are obtained by dividing the total wealth of each state as reported for 1880, 1900, and 1922 in *Estimated National Wealth, 1922*, Bureau of the Census, p. 25-27, by the total number of children 5 to 14, as reported by the Bureau of the Census for these years. Ages 5 to 14 were used instead of 6 to 13, since data for the latter ages were not available for the years concerned. Wealth as a basis of calculation includes federally owned wealth, as data making possible its segregation for the years concerned were not available.

(b) The indices of columns 8 to 10 were obtained by the method described in footnote (b) of Table 19.

(c) Dakota Territory.

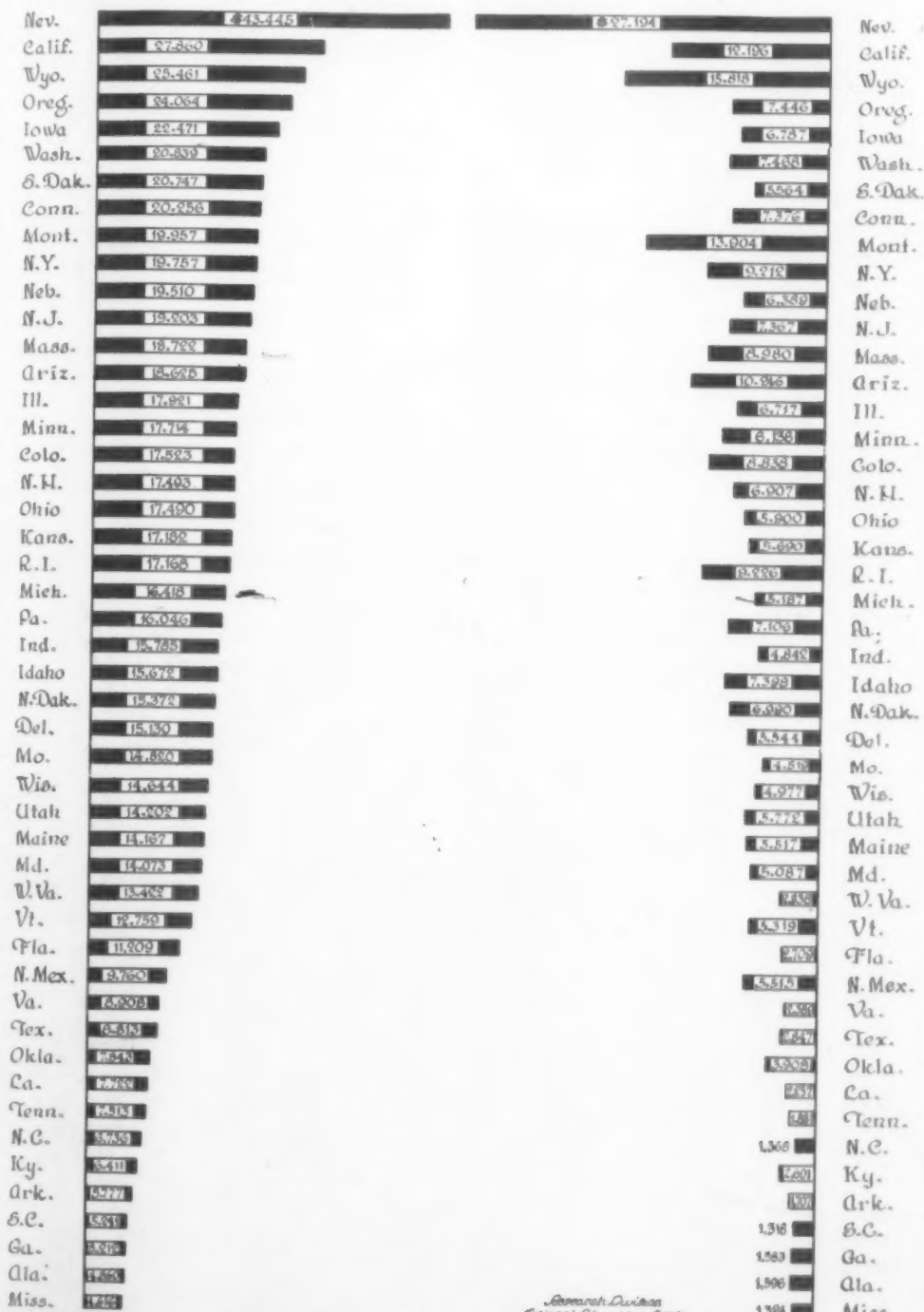
(d) Includes Indian Territory.

CHART XVII

WEALTH per CHILD, AGED 5-14, IN 1922 and 1900 COMPARED

Wealth per Child, Aged 5-14, in 1922

Wealth per Child, Aged 5-14, in 1900

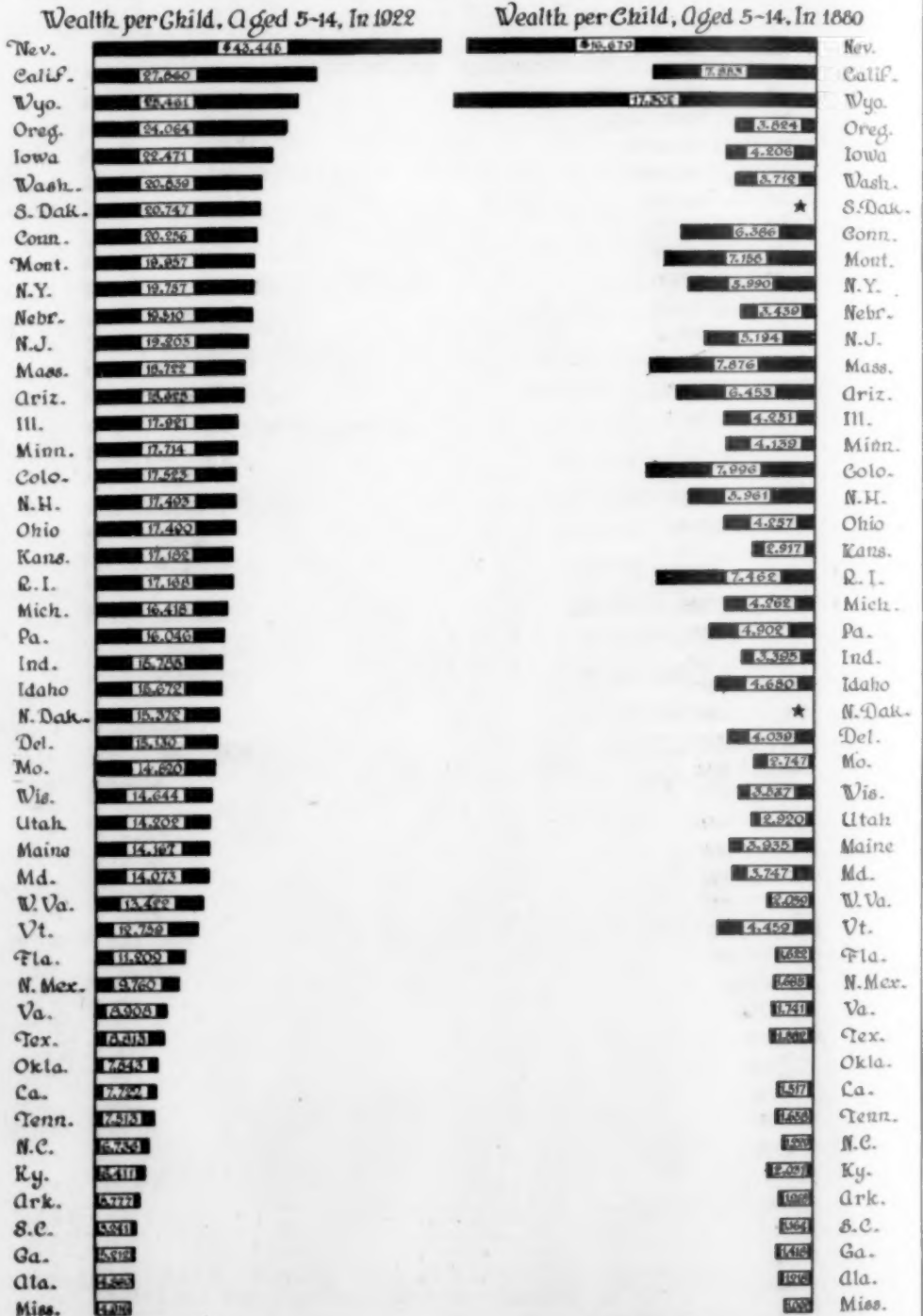


Source: Division
National Education Assn.

Read chart thus: In 1920, Nevada had \$43.445 of tangible wealth per child aged 5 to 14 inclusive; in 1900, \$27.194. Similarly read data for other states.

CHART XVIII

WEALTH per CHILD, AGED 5-14, IN 1922 and 1880 COMPARED

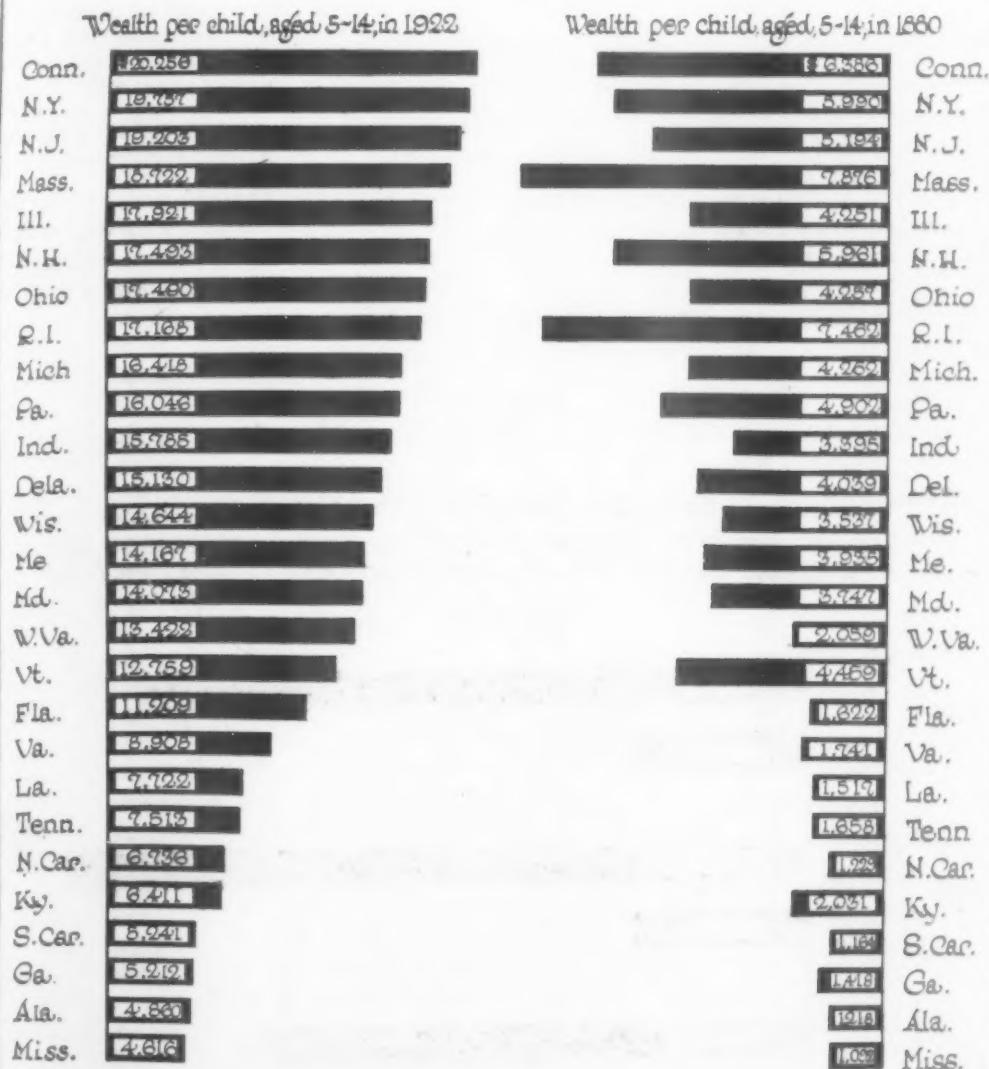


★ Dakota Territory

Research Division
National Education Assn.

CHART XIX

WEALTH PER CHILD, AGED 5-14, IN 1922 & 1880 COMPARED (STATES EAST OF THE MISSISSIPPI~)



Research Division
National Education Assoc.

Read chart thus: Connecticut in 1922 had \$20,256 of wealth per child aged 5 to 14 and \$3,386 of wealth per child aged 5 to 14 in 1880. Similarly read data for other states

child generally were similarly favored in 1900 and 1880. The correlation coefficients of the ranks of columns 5 to 7 of this table are as follows: 1800 with 1922=81.0; 1880 with 1900=90.9; 1900 with 1922=89.1.

Charts XVII to XIX graphically compare the position of each state as to wealth per child in the three years considered.

Chart XIX is especially significant since it includes only states east of the Mississippi whose economic development was well advanced by 1880.

As stated above, an answer to the question now being considered cannot be based upon figures as to income per child, since the necessary data are lacking. It is of interest to mention, however, that although the economists of the National Bureau of Economic Research

offer no final answer as to the permanency of a state's economic position, they do make one observation that is apropos in connection with a discussion of the factors that determine the economic position of the states:

The relative positions [in the income scale] of the northern states, when compared with those of the south, is an example of the advantage gained by the former states which will probably persist. It is reasonable to believe that for many years to come, the average normal income of the people living in New York, for instance, will be greater than that of the people living in Alabama.¹

Such facts as are available would seem to indicate that the position of a state with respect to its economic ability to support education is relatively permanent, at least over periods as long as forty-two years.

¹ Leven, Maurice. *Income in the United States*. p. 46.

CHART XX

PERMANENCY OF DIFFERENCES IN ABILITY TO SUPPORT EDUCATION

(Comparison of number of units of wealth per child in 1880, 1900 and 1922 in the twelve richest and the twelve poorest states in 1922.)



Research Division
National Education Assn.

Read chart thus: In 1880 the twelve states most able to support education in 1922 had 3.76 units of wealth per child. In comparison, in 1880 the twelve states least able to support education in 1922 had one unit of wealth per child. Similarly interpret data for 1900 and 1922.

CHAPTER V

Some Unmeasured Factors Affecting the Ability of the States to Support Education

In Chapter III the relative economic ability of the states to support education was arrived at by determining the number of units of economic power behind each child, aged six to thirteen. The definition of ability to support education as the number of units of economic power per child to be educated involves certain assumptions that need further examination.

Already sufficient work has been done to show that the influence of other factors than those considered in such a definition will have to be measured if an exact method of estimating the ability of a state to support education is to be developed.¹ This chapter will list some of these factors. It will be possible to do little more than mention most of them.

The definition of ability to support schools as the number of units of economic power per child assumes that the economic demands of education take first rank, and that they are to be satisfied before other demands receive attention, in short, that the full economic power of a state or such part of it as is needed is available for the support of education. This assumption needs further examination.

Education is but one of a number of services which compete for a share of the economic power of a state.² Food, shelter, clothing, and other essentials of life must be provided for out of a state's resources. In any consideration of a state's ability to support education one must not only consider the amount of its economic power, but also the availability of that economic power for school support. Among the factors that probably influence such availability may be mentioned the number and character of the population.

Population and Ability to Support Schools

Chapter III revealed that children constitute a significantly larger percentage of the population in some states than in others. In the past, in estimating ability to pay for education, it has usually been assumed that this factor was taken care of by dividing economic resources by number of children rather than by total population.

This assumption, that the ability to support schools and the number of children in a community vary in a direct ratio, is challenged by Clark, in a recently published study, who takes the position that the relationship is nearer to the following:

... that beginning with a reasonable number of children, doubling that number reduces to one fourth the amount of education that can be supplied for each child. That this is an under rather than an over-statement of the conditions should be clear from the fact that only the first of the list of causes given above is necessary to produce that result.³

The list of causes referred to in the quotation includes the following, the first of which it is contended is sufficient to justify the acceptance of the relationship suggested:

1. That the additional children have to be fed and clothed.
2. That a larger percentage of children makes a larger percentage of non-producing people.
3. That a larger percentage of children makes a smaller percentage of people in the most productive ages.⁴

Clark develops a formula by which the effect of the suggested law may be applied to a community in measuring its ability to sup-

¹ See references cited later in this chapter.

² See the following references:

Strayer, George D. and Haig, Robert Murray. *The Financing of Education in the State of New York*, The Macmillan Company, New York, 1923. p. 144 ff. Morrison, Henry C. *The Financing of Public Schools in the State of Illinois*, The Macmillan Company, New York, 1924. p. 148 ff.

³ Clark, Harold F. *The Effect of Population Upon Ability to Support Education*, Vol. II, No. 1, Bulletin of the School of Education, Indiana University, Bloomington, Indiana, 1925. p. 20.

⁴ Ibid. p. 19.

port education. This formula, with some support in previous investigation, accepts the ratio of two adults to one child as the "standard ratio" of adults to children in a stable population, and each community is compared to or measured by this ratio as a reference point. The formula used is $\frac{x^2}{4}$, in which x is the ratio of number of adults to each child. This means that one obtains the proper measure of the effect of the two variables, number of adults and number of children in a community, by squaring the ratio of adults to children and dividing by 4. If a community has the "standard" ratio of adults to children, namely, two adults to one child, the formula is employed as follows: $\frac{x^2}{4}$, or $\frac{4}{4}$, or 1.00 that is, the ratio of adults to children which is 2 squared, or 4 divided by 4, which gives the value. 1.00. This value in turn is multiplied by the community's per capita wealth to obtain the "standard ability" to support education. If a community has not two but one adult to each child, then the formula yields the value, .25, as follows: the ratio of adults to children is 1, which is squared to obtain 1, which is divided by 4 and yields the value in question—.25. This in turn is multiplied by per capita wealth.

In short, the formula seeks to correct per capita wealth, as a measure of ability to support schools, by taking account of varying percentages of children that populations with similar per capita wealth may have. The correction made is based upon the assumption that doubling the number of children in a

community reduces to one fourth its ability to pay for educating each child. Instead of per capita wealth, per capita income or any other acceptable measure of economic power per capita, such as those suggested in this thesis, may be employed along with the formula to determine ability to support schools.

The application of this formula to several states is made in Table 23. The most significant figures of Table 23 are those in columns 6 and 7. They indicate that if the ability of the United States as a whole to support education is represented by the value 1.00, then Alabama has an ability represented by the value, .21, California, 3.41 and Illinois 1.51. California's ability to support education is 3.41 times as great as the United States as a whole; Alabama's ability is but 21 percent as great as that of the country as a whole. Also by dividing the index number of column 7 for California by that given for Alabama, it appears that California's ability is 16 times as great as that of Alabama. Has this figure any claim for acceptance?

The acceptance depends upon the validity of the formula upon which its calculation is based. This investigation makes no claim that the formula is sound. In the absence of complete data, which Clark's study does not give, it at best must be looked upon as a hypothesis. It is felt, however, that the chances, either that the formula leads approximately to the truth, or that it represents an under- rather than an over-statement of the

TABLE 23.—STATES COMPARED AS TO STANDARD ABILITY TO SUPPORT EDUCATION

States	Ratio of number of adults to each child (x)	Ratio of column 2 squared (x^2)	Ratio squared divided by four ($\frac{x^2}{4}$)	Per capita wealth	Standard ability—column 4 multiplied by column 5	Index of ability to support schools
1	2	3	4	5	6	7
Alabama.....	.95	.90	.23	\$1,240.74	\$285.37	.21
California.....	2.08	4.33	1.08	4,283.18	4,625.83	3.41
Illinois.....	1.55	2.40	.60	3,418.81	2,051.29	1.51
United States.....	1.35	1.82	.46	2,945.13	1,354.76	1.00

Read table as follows: Column 2 shows that for every one child (1 to 20 years, inclusive) in Alabama, there is .95 adults. In column 3 this .95 is squared, and in column 4 it is divided by 4, which gives the result .23, which when multiplied by the per capita wealth of the state as given in column 5, gives the figure of column 6, \$285.37. The indices of column 7 are obtained by dividing each of the figures in column 6 into \$1,354.76, the standard ability of the United States as a whole, the result in each case being multiplied by 100. The indices of column 7 make it possible readily to compare the ability of any state to support education with that of the country as a whole. Similarly read the figures for California, etc.

weight that should be given to the influence on ability to support education of varying percentages of children in a community, are sufficiently good to justify giving it consideration. It is believed to be one of the most suggestive methods that can be used for interstate comparisons, which has been devised to weight the obviously important influence of an increasing percentage of children in a community upon ability to supply a given grade of education. This is the justification for the space that is given to it here. If a better method is derived and reported with adequate supporting data, the formula described here will have to give way.¹

The formula seems to lead nearer the truth than do past attempts made to measure the influence of differing percentages of children in a population upon ability to support education. This statement is based upon inspection of data such as those in Table 24, rather than upon a comprehensive and scientific evaluation, such as will be necessary before any final conclusions can be drawn.

The calculations of Table 24 are similar to those of Table 23, except that the formula is applied to each of the measures of economic power, developed in Chapter II, as well as to per capita wealth. Column 7 of Table 24 corresponds to column 4 of Table 23. The figures of column 7, Table 24, are multiplied by each of the per capita measures of column 8 to 12 to obtain the data in columns 13 to 17 for each of these measures of economic power. The data of the latter columns of Table 24 are similar to those given for per capita wealth in columns 6 and 7 of Table 23.

Table 24 shows that Alabama, with slightly less than one adult per child (column 5), and with \$308 per capita income (column 10), has according to the indices of column 15 but one fifteenth as much ability to support schools as California, with slightly more than

two adults for each child and a per capita income of \$975. Does this ratio of fifteen to one appear to be a better indication of the relative ability of these two states to support education than the five to one ratio for the same states given in Table 12, which results from comparing the number of units of income behind each child six to thirteen?

Thinking toward the answer to this question may be facilitated by considering an individual family. Suppose that one family is composed of two adults and one child while another has two adults and two children. And suppose, further, that the first family consisting of a man and his wife and one child enjoys a total income of approximately \$3000 a year—California has a per capita income of \$975 a year, see Table 24, and that the second family consisting of a man and wife and two children enjoys a yearly income of approximately \$1200—Alabama has a per capita income of \$308, see Table 24. Insofar as the economic ability of the two families is concerned, is the first family five times or fifteen times better able to provide its children a given amount of education than the second family?

This dissertation does not attempt to answer this question. To do so would involve the weighing of a series of economic influences which interlock with great complexity. The illustration in the preceding paragraph is offered as an aid to the thinking which must precede more detailed study and arrival at final conclusions, rather than as a defense of either of the methods used in arriving at the two ratios representing the comparative ability of California and Alabama to support education.² It should also be recognized that certain factors begin to enter when many families of varying sizes and conditions are thrown together in a state that do not appear in considering a hypothetical average family such as that just assumed.

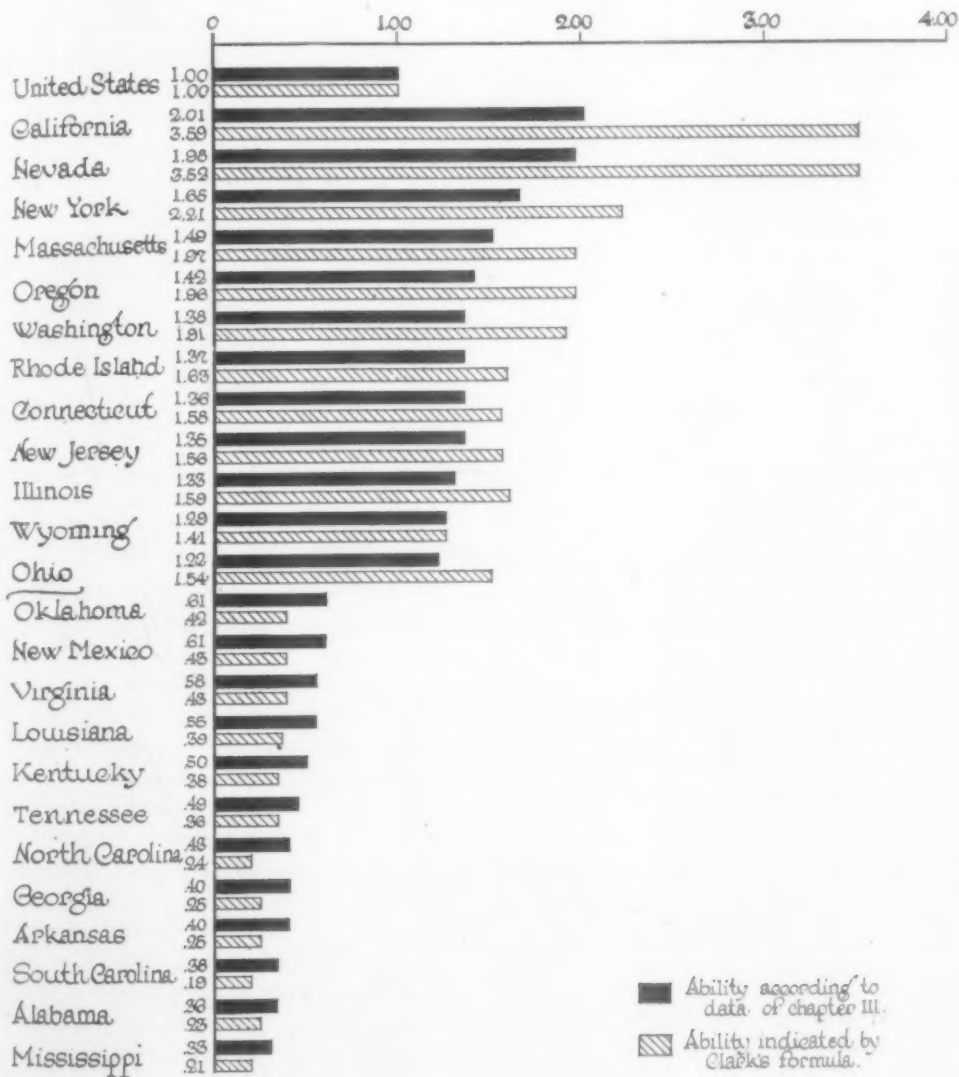
¹ It is not feasible to produce such supporting data and arguments for his formula as Clark advances. These may be found in the study as cited. Also consult Clark's study, pages 4 to 8, for a review of previous attempts to measure the effect of population on ability to support schools.

² It is recognized that the methods used in arriving at the five to one and the fifteen to one ratios are not comparable for a number of reasons. For example, in one case the number of children in a state is those aged six to thirteen inclusive and in the other it is one to twenty inclusive. It is not the methods, however, that we are interested in comparing in this chapter but rather the final product, that is, the relative ability of the states to support education. One method indicates that California is five times as able to support education as Alabama; the other indicates that the ratio is fifteen to one. Any method, either of those described in this study or others, which yields a result closest to the truth in what students of education are seeking. It is a comparison of the results yielded by two methods, rather than two methods, that is made here.

CHART XXI

RELATIVE ABILITY OF RICH & POOR STATES TO SUPPORT EDUCATION

(Comparison of results of two methods of determining comparative ability to support schools. Ability of United States = 1.00 by both methods.)



Read chart thus: Twelve rich and twelve poor states are compared as to ability to support education, according to two methods of determining ability. The ability of the United States as a whole according to both methods is given the value 1.00. If ability to support education is defined as the number of units of economic power per child (Chapter III), California has 2.01 times as much ability as the country as a whole. If ability to support education is determined by using Clark's formula, which assumes that doubling the percentage of children in a community reduces to one-fourth its ability, then California has 3.59 times as much ability as the country as a whole. Mississippi has .23 as much ability to support education as the country as a whole by the first method of calculating ability, and .21 by the second.

California has 6.09 (2.01 divided by .33) times the ability of Mississippi to support education according to the first method; California has 17.0 (3.59 divided by .21) times the ability of Alabama according to the second method.

Similarly interpret and compare data for other states.

The figures given for each state are from Table 12, column 12, page 36, and Table 24, column 23, page 64.

Density of Population and Ability to Support Schools

Density of population is another influence bearing upon ability to support schools which to date has been given relatively little attention. Those familiar with factors affecting the cost of education will readily agree that density of population plays some influence upon the cost of offering a given educational opportunity. It costs more to give a child in Nevada, living miles from other children, a given amount of schooling than a child living in the thickly settled sections of New York or Illinois. Mort has dealt with this problem as it is encountered in a single state and some of the principles and methods laid down in his study can be used in interstate studies.¹

No attempt is made in this dissertation, however, to estimate accurately the difference in the cost of education per child in a state like Nevada, with less than one person per square mile, and in a state like Rhode Island, with 566 people per square mile. To apply Mort's technique to the situation in the forty-eight states would require the assembling of much data not readily available and a study of considerable length in itself.

Some attention may be given, however, to another investigation, by Staffelbach, which attempts roughly to measure the influence of density of population in a state on school costs. This study among other things seeks to determine:

1. The point on the scale of population densities at which density ceases to be a factor conducing to higher unit costs of education.
2. What increases in unit costs occur as population densities decrease.²

The calculations of this investigation were based upon density of population data for

whole states, since adequate figures for sections of states were unavailable. This difficulty is met by assuming that "where the effect of sparseness of population was present in any large portion of a state, it would be reflected in the average unit cost of the entire state."

In order to take proper account of the fact that educational standards vary in different states, the percentage of literacy of the Census for 1920 was employed as a basis for grouping states which maintained approximately equal educational standards.³

Staffelbach's findings, which are presented as "estimates" and as indicative rather than conclusive, are that:

1. Unit costs in education remain unaffected by changes in population densities in states having twenty-four or more people per square mile.⁴
2. In states having six or less people per square mile, school costs are increased approximately thirty-three percent by low population density, while in states having from six to twenty-four people per square mile school costs are increased approximately five percent by low population density.

In Table 25 are given figures showing the effect of applying Staffelbach's findings to the indices of the relative ability of the states to support schools developed in Chapter III and to those resulting from an application of Clark's formula to the various measures of economic power. This table seems to show that increased costs due to sparsity of population is an important factor in increasing the burden of the educational load in seven states, Nevada, Wyoming, Arizona, Montana, Idaho, Utah, and New Mexico. It acts as a minor factor in increasing costs in ten other states. The density of population in the remaining thirty-one states appears to have passed the point on the scale of population densities at

¹ Mort, Paul R. *The Measurement of Educational Need*, Teachers College, Columbia University, New York City, 1924. See particularly pages 82 and 83.

² Staffelbach, Elmer H. *Opportunities of the Federal Government in the Support of Public Education*. Unpublished dissertation completed at Stanford University, Calif.

³ The validity of certain objections that may be raised against the use of the methods just described are recognized by Staffelbach in his study. He believes the methods he employed to be the best that his facilities permitted, however. The value of either Staffelbach's or Clark's study should not be determined on the basis of the very meager presentation of their findings that seems desirable here.

⁴ Mort, in the study cited, concludes that in New York State in elementary schools having two or more teachers, the cost per pupil is directly proportional to the number of pupils attending in districts having an average daily attendance of 142 and over, and that a similar direct relationship is obtained in high schools with an average daily attendance of 518 and above. For a discussion of Mort's findings as applied to a practical situation, see: State of New York, *Report of the Special Joint Committee on Taxation and Retrenchment*, Legislative Document (1925), No. 97, February 15, 1925, Albany, New York, p. 198 f.

which density ceases to be a factor conducing to higher unit costs of education.¹

The modifications in Table 25 of the previously presented data as to the relative abil-

¹How much these conclusions will be modified, when data are available as to population densities for small geographic sections, rather than the average figure for whole states, can only be conjectured.

TABLE 25.—COMPARATIVE ABILITY OF STATES TO SUPPORT EDUCATION AS INDICATED BY VARIOUS METHODS OF DETERMINING ABILITY

States	Population per square mile—1920	Per cent of school costs due to sparsity of population	Relative ability of the states to support education as indicated by—			
			Units of economic power per child aged 6-13	Clark's formula (standard ability)	Column 4 corrected for sparsity of population	Column 5 corrected for sparsity of population
1	2	3	4	5	6	7
United States.....	35.4	0	1.00	1.00	1.00	1.00
California.....	22.0	5	2.01	3.59	1.91	3.41
Nevada.....	.7	33	1.08	3.52	1.33	2.36
New York.....	217.9	0	1.65	2.21	1.65	2.21
Massachusetts.....	479.2	0	1.49	1.97	1.40	1.97
Oregon.....	8.2	5	1.42	1.96	1.35	1.86
Washington.....	20.3	5	1.38	1.91	1.31	1.81
Rhode Island.....	566.4	0	1.37	1.63	1.37	1.63
Connecticut.....	286.4	0	1.36	1.58	1.36	1.58
New Jersey.....	420.0	0	1.35	1.56	1.35	1.56
Illinois.....	115.7	0	1.33	1.59	1.33	1.59
Wyoming.....	2.0	33	1.29	1.41	.86	.94
Ohio.....	141.4	0	1.22	1.54	1.22	1.54
Michigan.....	63.8	0	1.20	1.37	1.20	1.37
New Hampshire.....	49.1	0	1.20	1.66	1.20	1.66
Colorado.....	9.1	5	1.19	1.34	1.13	1.27
Delaware.....	113.5	0	1.15	1.38	1.15	1.38
Pennsylvania.....	194.5	0	1.15	1.16	1.15	1.16
Arizona.....	2.9	33	1.14	1.02	.76	.68
Iowa.....	43.2	0	1.14	1.22	1.14	1.22
Maryland.....	145.8	0	1.12	1.22	1.12	1.22
Minnesota.....	29.5	0	1.05	1.04	1.05	1.04
Maine.....	25.7	0	1.04	1.32	1.04	1.32
Nebraska.....	16.9	5	1.03	1.00	.98	.95
South Dakota.....	8.3	5	1.03	.83	.98	.79
Indiana.....	81.3	0	1.02	1.19	1.02	1.19
Montana.....	3.8	33	1.01	1.05	.68	.70
Kansas.....	21.6	5	1.01	1.02	.96	.97
Wisconsin.....	47.6	0	.99	1.01	.99	1.01
Vermont.....	38.6	0	.97	1.21	.97	1.21
Missouri.....	49.5	0	.96	1.11	.96	1.11
Idaho.....	5.2	33	.92	.76	.62	.51
Utah.....	5.5	33	.81	.55	.54	.37
West Virginia.....	60.9	0	.77	.53	.77	.53
North Dakota.....	9.2	5	.75	.49	.71	.47
Texas.....	17.8	5	.69	.50	.66	.48
Florida.....	17.7	5	.69	.61	.66	.58
Oklahoma.....	29.2	0	.61	.42	.61	.42
New Mexico.....	2.9	33	.61	.43	.41	.29
Virginia.....	57.4	0	.58	.43	.58	.43
Louisiana.....	39.6	0	.55	.39	.56	.39
Kentucky.....	60.1	0	.50	.38	.50	.38
Tennessee.....	56.1	0	.49	.36	.49	.36
North Carolina.....	52.5	0	.45	.24	.45	.24
Georgia.....	49.3	0	.40	.25	.40	.25
Arkansas.....	33.4	0	.40	.25	.40	.25
South Carolina.....	55.2	0	.38	.19	.38	.19
Alabama.....	45.8	0	.36	.23	.36	.23
Mississippi.....	38.6	0	.33	.21	.33	.21

Read table thus:

The cost of education in California is increased five percent by sparsity of population. Therefore, its ability to support education as indicated by the figures of column 4 shows a 5 percent greater ability than it really has, when compared with states with density of 24 people or more at which point, density of population ceases to be a factor in school costs. Therefore, the 2.01 of column 4 is reduced by 5 percent or to 1.91 and is recorded in column 5. Similarly the ability of California as indicated by the figure in column 5 is reduced 5 percent in column 7. Similarly read data for other states.

Sources of data:

Column 2 from U. S. Census.

Column 3 based on Staffelsch's investigation described on page 66 of the text of this study.

Column 4 from Table 12, column 12, page 36.

Column 5 from Table 24, column 23, page 64.

Columns 6 and 7 obtained by subtracting figures in column 3 from 100 percent and multiplying columns 4 and 5, respectively, by the results.

ity of the states to support education, so as properly to account for increased costs due to sparsity of population, should be looked upon as roughly suggestive, rather than exact. This is particularly true when individual states are being considered. Some of the assumptions upon which Staffebach's findings rest are admittedly of unproved validity.¹ Further investigation may prove the findings of this pioneering study to be close to or far from the truth.

Table 25 is not presented because it necessarily gives more exact facts than those previously presented, particularly for individual states, as to ability to support education. It is included to show whether further developments of the technique for properly weighing the influence of population density on school costs promise seriously to affect the findings of Chapter III as to the variations among the states in ability to support education. Table 25 suggests the possibility that conclusions as to the ability to support education, of two states in the upper quartile, Nevada and Wyoming, and of one in the lower quartile, New Mexico, may be significantly modified if sparsity of population, as a factor affecting school costs, is given due weight. It is probable that any statement of the ability of Nevada and Wyoming to support education, as compared with that of the nation, which ignores the population density factor, will indicate a greater ability than these states actually possess.

Seven of the twelve states in the first quartile have a density of population three or more times as great as the average for the country as a whole. It appears unlikely that the ability of these states to support education, relative to the average condition in the country, will have to be significantly revised downward as more exact knowledge of the influence of population densities is built up. Similarly, nine of the twelve states in the lower quartile have a density of population above that of the average of the country, namely, thirty-five people per square mile.

If Staffebach's hypothesis, that unit costs of education remain unaffected in population densities having twenty-four or more people per square mile, is within reasonable proximity to the truth, then the findings as to ability to support education for but one of the twelve states in the lower quartile need revision.

Taken as a whole, the table points toward the conclusion that the variations in ability to support education indicated by Chapter III will not have to be significantly modified because of a failure properly to weight the factor of density of population in determining the size of the educational task faced by the states.

Cost of Living and Ability to Support Schools

One other influence should be mentioned which may eventually prove to be significant in determining the relative ability of the states to support schools. This is the cost of living. That the cost of living varies in different cities in the United States is a well-established fact.¹ No data exist, as yet, that justify even a guess as to how this factor may eventually affect conclusions as to the relative ability of the states to support education.²

Table 26 gives figures as to the comparative cost of living in thirty-two cities in the United States. The cities in states in the same quartile, with reference to ability to support education, are grouped. The indices of the comparative cost of living in ten cities located in the richest states in 1924 averaged 102.35, while the similar average for eight cities located in the poorest was 100.47. Table 26 does not indicate that the cost of living, at least for the particular type of workers which the data concern, is significantly and consistently different in cities located in the rich states, from that in cities in poor states.

Before anything definite can be stated, however, as to the influence of variations in the cost of living on school costs, studies of the cost of living will have to be made of a type which do not exist at present. Before this factor can be measured as it affects "the cost of educating"³ it will be necessary to deter-

¹ *The Cost of Living in the United States*, National Industrial Conference Board, New York City, 1925.

² A study now in progress by David P. Harry at Teachers College, Columbia University, New York City, entitled, "The Influence of Variations in the Cost of Living of Teachers on Educational Need," will attempt to estimate the effect of variations in the cost of living in different localities in New York State on school costs.

³ For a discussion of the application of index numbers of the purchasing power of the dollar to the measurement of school costs, see this reference: Norton, John K., "Standard of Living and Standard of Educating, Have They Kept Pace?", *Journal of Educational Research*, January, 1926. pp. 22-35.

mine the comparative cost of living for educational workers in the different states. The data now in existence as to the cost of living for other than educational workers is applicable only in part. As a recent investigation points out:

There is no such thing as the cost of living or the minimum cost of living for any but the most homogeneous groups, in a limited area, within a specified period.¹

In this chapter there has been suggested some of the more important factors influencing the cost of education which it will be necessary to measure before we can arrive at an exact method of estimating ability to support education. There may be others. So far as data now available indicate, the eventual accurate measurement of those discussed in this

section will probably not make it necessary to change the principal conclusion that can be drawn from the data presented in Chapter III, namely, that there are significant differences between the states in ability to support education. These factors when more accurately measured may result in considerable changes in the estimated ability to support education of individual states, particularly as it compares with the situation in the country as a whole. It appears probable, from data now available, which are indicative rather than conclusive, that after the more important factors influencing the ability of the states to support education have been accurately measured that there will continue to exist differences in ability to support education at least equal to those indicated by the data of Chapter III.

¹ *The Cost of Living in the United States*, National Industrial Conference Board, New York City, 1925. p. 31.

TABLE 26.—COMPARATIVE COST OF LIVING IN CERTAIN CITIES, 1918, 1920, AND 1924

States and cities	Indices of comparative cost of living for families in—			States and cities	Indices of comparative cost of living for families in—		
	December, 1918	June, 1920	December, 1924		December, 1918	June, 1920	December, 1924
United States.....	100.00	100.00	100.00	United States.....	100.00	100.00	100.00
Los Angeles.....	92.1	94.8	103.4	Indianapolis, Ind.....	91.2	92.7	94.0
San Francisco and Oakland.....	100.9	101.0	103.5	Kansas City.....	96.8	98.4	94.4
California (Aver.).....	96.5	97.9	103.45	St. Louis.....	94.0	96.7	98.4
Buffalo.....	101.8	100.4	101.1	Missouri (Aver.).....	95.4	97.55	96.4
New York City.....	106.4	105.9	107.0	Houston, Texas.....	101.1	98.4	99.2
New York (Aver.).....	104.1	103.1	104.05	Jacksonville, Fla.....	108.4	110.3	108.9
Boston, Mass.....	100.3	99.8	99.4	Average Q ¹	98.3	99.3	98.98
Portland, Oreg.....	106.3	104.4	101.9	Norfolk.....	117.4	116.4	113.2
Seattle, Wash.....	107.8	107.6	107.6	Richmond.....	94.6	93.0	94.5
Chicago, Ill.....	101.9	102.3	104.9	Virginia (Aver.).....	106.0	104.7	103.85
Cincinnati.....	81.4	82.3	82.5	New Orleans, La.....	90.0	87.4	93.2
Cleveland.....	106.9	110.7	112.2	Memphis, Tenn.....	106.7	106.4	109.7
Ohio (Aver.).....	94.15	96.5	97.35	Atlanta.....	95.3	94.2	92.5
Average Q ¹	100.58	100.92	102.35	Savannah.....	102.3	98.6	92.3
Detroit, Mich.....	106.0	113.3	109.7	Georgia (Aver.).....	98.8	96.4	92.4
Denver, Colo.....	93.0	93.3	93.7	Birmingham.....	109.9	107.4	110.9
Philadelphia.....	102.4	101.4	104.9	Mobile.....	100.8	98.1	97.5
Pittsburgh.....	98.8	99.0	104.1	Alabama (Aver.).....	105.35	102.75	104.2
Seranton.....	93.8	93.9	97.8	Average Q ⁴	102.1	100.1	100.47
Pennsylvania (Aver.).....	98.3	98.1	102.2				
Baltimore, Md.....	87.9	82.2	84.1				
Minneapolis, Minn.....	94.1	93.9	96.4				
Portland, Maine.....	98.4	95.7	96.1				
Average Q ²	96.8	96.58	98.35				

Read table thus:

In 1918 it cost \$92.10 in Los Angeles to purchase certain articles which cost \$100.00 in San Francisco, \$101.80 in Buffalo, etc. Similarly read data for other cities and for other years. Only the indices for the same year should be compared, that is, the indices for 1918 for one city may be compared with those of another for the same year. Those given for one city in 1918 should not be compared with those for the same city or another city for 1920 or 1924.

Table based on Table 2, p. 29, *The Cost of Living in the United States*, National Industrial Conference Board.

Q¹ equals average for certain cities in states of first quartile as to ability to support schools.

Q² equals average for certain cities in states of second quartile as to ability to support schools.

Q³ equals average for certain cities in states of third quartile as to ability to support schools.

Q⁴ equals average for certain cities in states of fourth quartile as to ability to support schools.

CHAPTER VI

Summary and Conclusions

The first object of this study is to give a quantitative answer to the question: What is the relative ability of the states of the union to support education providing they tap their economic resources in an ideal manner? To answer this question it is necessary to measure the economic power and the size of the educational obligation of each state.

Several measures of each state's economic power are presented. These are based upon the value of tangible wealth and the amount of average annual income of the states. The number of children aged six to thirteen is suggested as a measure of the size of the educational obligation faced by each state.

The ability of a state to support education is obtained by dividing the various measures of a state's economic power by its number of children aged six to thirteen. Ability to support schools is thus defined as the number of units of economic power behind each unit of educational work to be performed.

The data presented indicate that the richest state of the forty-eight is approximately six times as able to meet its educational obligations as the poorest state. Considered as groups, the twelve richest states of the forty-eight are three times as able to meet their educational obligations as the twelve poorest states.

This question is also raised by the investigation: What are some of the accompaniments of such differences as exist in the ability of the states to support education? Data are presented which point toward these conclusions:

1. The rich states afford their schools much more adequate financial support than the poor states.
2. The school systems in the rich states generally appear to be more efficiently organized than those in the poor states.
3. The general level of educational attainment of the people in the rich states is significantly higher than that of the people in the poor states.

On the other hand, when we define effort

made to support education as the percentage of economic power annually allotted for school maintenance, it appears that there is little relationship between the ability possessed and the effort made by a state to support education. In a given period different states tend to allot similar percentages of their economic resources for school support whether they possess a relatively large or small number of units of economic power behind each child to be educated. This tentative conclusion is based on data for 1922. Such data as are available on the same point for previous periods point to the validity of this hypothesis.

Are the differences that exist in the ability of the states to support education temporary or relatively permanent? Figures bearing on this point seem to indicate that existing differences in ability to support education are not peculiar to this decade and that similar differences will probably be found in the future. There is also some evidence that a state's comparative position, with respect to its ability to support education, is relatively permanent. In the majority of cases it has shown no tendency to fluctuate widely since 1880.

The investigation recognizes that the definition of ability to support education as the number of units of economic power behind each child to be educated is open to criticism. Some factors, which the investigation makes no attempt to measure, probably exercise considerable influence in determining the ability of a state to support education. Among those recognized and discussed in this investigation are:

1. The effect of varying percentages of children in a population
2. The influence of density of population
3. The influence of differences in the cost of living.

The data available as to the influence of these factors in determining the ability of the states to support schools are inconclusive. So far as existing data indicate, the exact measurement of these factors will probably not make it necessary to change the principal con-

clusion of this investigation, namely, that there are significant differences between the states in ability to support education. It is probable that the data of this study under- rather than over-estimate the magnitude of these differences.

It seems safe to conclude, therefore, that some states must bear tax rates five and six times as great as other states to provide a given school opportunity for their children. The twelve states least able to support education, considered as a group, will find it necessary to maintain tax rates three times as high as the twelve richest states to raise a given sum for the education of each child.

It is possible that this will eventually be done by the poor states. There is little evidence at present, however, to justify the hope. There is more evidence to point toward the conclusion that the poor states will not devote any higher percentage of their economic power to education than the rich states. If this hypothesis is valid then we may expect the existing wide differences among the states in the provision made for financial support to continue.

If in addition, we accept the tentative conclusion that differences in ability to support education comparable to those now in existence are a relatively permanent condition, then we may conclude that certain sections will, over extended periods, provide school facilities distinctly inferior to those found in other sections. At least, this will be true insofar as financial support determines the character of school facilities.

These facts may be given various interpretations. Some will contend that education is so important to national advancement that it is dangerous to disregard a situation that promises to provide children in some sections with school opportunities much inferior to those provided in other sections. Those who take this view are likely to maintain that it is neither just nor wise to accept a situation requiring some sections to levy taxes at rates from two to six times as high as other sections, in order to provide the minimum program of educational opportunity essential in a democracy.

Others will oppose this viewpoint. They will contend that it is possible for every state to levy taxes that will provide enough education for all. The fact that this may require much higher tax rates in some states than in others will not disturb them. They will maintain that any attempt, through federal aid, to equalize the burden of providing an acceptable minimum program of school opportunity, will tend to perpetuate indefensible economic situations existing in the poorer states.

This investigation neither accepts nor rejects these viewpoints. It is satisfied to present certain facts and to limit their interpretation to conclusions that all may accept.

The principal conclusion drawn from the facts presented is this: The states differ widely in their economic ability to support education—some states must levy taxes at rates from two to six times as high as others to provide a given amount of financial support for each child to be educated.



APPENDIX

TABLE A.—WEALTH BY STATES

(Expressed in thousands of dollars)

States	Aggregate wealth (a)	Federal property (b)			Percent that federal property is of aggregate wealth (f)	Aggregate wealth exclusive of federal property (g)	Real estate and improvements exclusive of federal property (h)	Percentage that real estate is of aggregate wealth (i)	Index of real estate to aggregate wealth (j)
		Public domain, forests and mineral lands (c)	Other federal property (d)	Total (e)					
1	2	3	4	5	6	7	8	9	10
United States....	\$313,021,560	\$1,515,162	\$1,463,613	\$2,978,775	.95	\$310,042,785	\$172,160,770	55.53	100.00
Alabama.....	3,002,043	621	87,955	88,576	2.95	2,913,467	1,331,296	45.69	82.28
Arizona.....	1,314,291	74,262	19,739	94,001	7.15	1,220,290	721,593	59.13	106.48
Arkansas.....	2,599,617	9,248	2,727	11,975	.46	2,587,642	1,469,182	56.78	102.25
California.....	15,031,734	275,742	78,137	353,879	2.35	14,677,855	8,006,843	54.55	98.24
Colorado.....	3,229,412	81,655	21,293	102,948	3.19	3,126,464	1,655,498	52.95	95.35
Connecticut.....	5,286,445		4,596	4,596	.09	5,281,849	3,019,887	57.17	102.95
Delaware.....	625,765		8,548	8,548	1.37	617,217	319,827	51.82	93.32
Florida.....	2,440,491	3,443	5,813	9,256	.38	2,431,235	1,542,457	63.44	114.24
Georgia.....	3,896,759	1,936	27,334	29,270	.75	3,867,489	1,925,466	49.79	89.66
Idaho.....	1,533,941	124,596	22,179	146,775	9.57	1,387,166	751,400	54.17	97.55
Illinois.....	22,232,794		60,834	60,834	.27	22,171,960	12,507,892	56.41	101.58
Indiana.....	8,829,726		16,855	16,855	.19	8,812,871	4,637,934	52.63	94.78
Iowa.....	10,511,682		16,764	16,764	.16	10,494,918	7,156,787	68.19	122.80
Kansas.....	6,264,058	4	29,494	29,498	.47	6,234,560	3,766,976	60.42	108.81
Kentucky.....	3,582,391		25,548	25,548	.71	3,556,843	1,839,391	51.71	93.12
Louisiana.....	3,416,860	11	23,159	23,170	.68	3,393,690	1,508,065	44.44	80.03
Maine.....	2,006,531	379	7,307	7,686	.38	1,998,845	1,012,260	50.64	91.19
Maryland.....	3,990,730		54,014	54,014	1.35	3,936,716	1,914,275	48.63	87.57
Massachusetts.....	12,980,839		102,046	102,046	.79	12,878,793	7,054,064	54.77	98.63
Michigan.....	11,404,861	394	22,413	22,807	.20	11,382,054	5,767,672	50.67	91.25
Minnesota.....	8,547,918	7,564	9,490	17,054	.20	8,530,894	5,187,154	60.80	109.49
Mississippi.....	2,177,690	24	2,135	2,159	.10	2,175,531	1,136,800	52.25	94.09
Missouri.....	9,981,409		7,508	7,508	.08	9,973,901	5,788,798	58.04	104.52
Montana.....	2,223,189	126,590	17,476	144,066	6.48	2,079,123	1,079,899	51.94	93.54
Nebraska.....	5,320,075	1,067	16,554	17,621	.33	5,302,454	3,513,034	66.25	119.30
Nevada.....	541,716	78,216	7,541	85,757	15.83	455,959	169,712	37.22	67.03
New Hampshire.....	1,374,135	4,790	17,600	22,390	1.63	1,351,745	642,578	47.54	85.61
New Jersey.....	11,794,189		50,938	50,938	.43	11,743,251	5,799,629	49.39	88.94
New Mexico.....	851,836	63,165	13,890	77,055	9.05	774,781	363,717	46.94	84.53
New York.....	37,035,262		163,830	163,830	.44	36,871,432	20,594,004	55.85	100.58
North Carolina.....	4,543,110	3,833	19,225	23,058	.51	4,520,052	2,348,307	51.95	93.55
North Dakota.....	2,467,772	401	3,718	4,119	.17	2,463,653	1,621,844	65.83	118.55
Ohio.....	18,489,552		30,989	30,989	.17	18,458,563	10,145,308	54.96	98.97
Oklahoma.....	3,993,524	919	6,264	7,183	.18	3,986,341	2,065,772	51.82	93.32
Oregon.....	3,419,459	201,987	10,689	212,676	6.22	3,206,783	1,876,835	58.53	105.40
Pennsylvania.....	28,833,745	1,122	113,686	114,808	.40	28,718,937	14,799,315	51.53	92.80
Rhode Island.....	1,924,326		6,228	6,228	.32	1,918,098	906,191	47.24	85.07
South Carolina.....	2,404,845	224	22,947	23,171	.96	2,381,674	1,166,773	48.99	88.22
South Dakota.....	2,925,968	9,737	6,693	16,430	.56	2,909,538	2,056,188	70.67	127.26
Tennessee.....	4,228,251	2,541	7,770	10,311	.24	4,217,940	2,489,067	59.01	106.27
Texas.....	9,850,888		47,340	47,340	.48	9,803,548	5,915,266	60.34	108.66
Utah.....	1,535,477	70,256	7,685	77,941	5.08	1,457,536	717,106	49.20	88.60
Vermont.....	842,040		2,349	2,349	.28	839,691	393,021	46.81	84.30
Virginia.....	4,891,579	3,120	125,817	128,937	2.64	4,762,633	2,643,436	55.50	99.95
Washington.....	5,122,405	91,176	53,065	144,241	2.82	4,978,164	3,113,058	62.53	112.61
West Virginia.....	4,677,919	751	28,569	29,320	.63	4,648,599	3,221,373	69.30	124.80
Wisconsin.....	7,898,031	6	5,668	5,674	.07	7,892,363	4,204,689	53.49	96.33
Wyoming.....	976,239	275,382	21,194	296,576	30.38	679,663	293,170	43.13	77.67

See p. 73 for footnotes.

Index of real estate to aggregate wealth (j)
10
100.00
82.28
106.48
102.25
98.24
95.35
102.95
93.32
114.24
89.66
97.55
101.58
94.78
122.80
108.81
93.12
80.03
91.19
87.57
98.63
91.25
109.49
94.09
104.52
93.54
119.30
67.03
85.61
88.94
84.53
109.58
93.55
118.55
98.97
93.32
105.40
92.80
85.07
88.22
127.26
106.27
108.66
88.60
84.30
99.95
112.61
124.80
96.33
77.67

FOOTNOTES FOR TABLE A

(a) These figures of aggregate wealth are based on Table 4, column 2, p. 21, *Estimated National Wealth*, Bureau of the Census. They exclude from the grand total \$1,445,992,000, value of ships belonging to the United States Navy, \$360,885,000 value of privately owned water-supply systems, and \$4,278,155,000, value of gold and silver coin and bullion, not distributed by states. They also exclude all wealth designated District of Columbia.

(b) These figures are copied from unpublished records made available in the office of the Bureau of the Census, Washington, D. C.

(c) These figures show valuation of Federal property as follows: Public Domain (Land Office), Department of the Interior; Government Lands in National Forests, Department of Agriculture; Bureau of Mines, Department of Interior. They exclude valuation designated District of Columbia.

(d) These figures are taken from unpublished records stating valuation of Federal property. They consist of valuation enumerated: Real property of the Department of Agriculture exclusive of National Forests; Military Posts exclusive of Ordnance Offices, War Department; Shore Stations, Industrial Yards, Navy Department; Outlay for buildings under control of Treasury Department; Chief of Engineers, U. S. Army, War Department; Ordnance Office, War Department; Reclamation Service, Department of the Interior. They also exclude valuation designated District of Columbia.

(e) The grand total of all Federal property is \$3,691,986,812 as compared with the \$2,978,775 given here. The property excluded consists of the following items, each of which taken separately range below twenty million dollars in value: Post Office Department Air Mail Service; U. S. Coast and Geodetic Survey; United States Housing Corporation; Bureau of Fisheries; Inland and Coastwise Waterways Service; Coast Guard (Buildings and Lands); Bureau of Standards; Naval Radio and Miscellaneous Naval Stations; Smithsonian Institute; Bureau of Immigration; Indian Affairs (exclusive of Irrigation); Indian Service (Irrigation). They also exclude four items of valuation which taken separately range from thirty-eight to fifty-eight million dollars in value: U. S. Veterans' Bureau; Naval Air Service, and Investments in Plants of Navy Contractors; Air Service (War Department); Bureau of Lighthouses. Shore Stations, non-industrial yards and stations, Navy Department, valued at around one hundred forty million dollars, are also excluded. All valuations designated District of Columbia are not included in these figures. It was impossible to obtain the value of these properties, distributed by states, hence they are not included in the figures of column 5.

(f) These percentages are obtained by dividing the figures in column 5 by those in column 2.

(g) These figures are obtained by deducting column 5 from column 2 of this table.

(h) Figures of Real Estate and Improvements are based on Table 4, column 3, p. 21, *Estimated National Wealth*, Bureau of the Census.

From the figures given in the preceding reference, figures of column 5 were deducted.

(i) These percentages are obtained by dividing the figures in column 8 by those in column 7.

(j) These indices are obtained by dividing every figure in column 9 by 55.53. This gives an index figure of 100 in a state where the ratio of real estate to aggregate wealth is 55.53, or the same as the country as a whole. The 82.28 of Alabama may be interpreted as follows: An increase of 17.72 (100 minus 82.28) in the value of real estate would bring the state in agreement with the country as a whole with respect to ratio of real estate to total wealth. A similar result will be obtained for Arizona by decreasing the value of real estate 6.43 percent (100.43 minus 100). Similarly interpret indices for other states.

TABLE B.—PERCENTAGE OF TOTAL INCOME AND CURRENT INCOME, 1919 TO 1921, REALIZED IN EACH OF THESE THREE YEARS
(Expressed in thousands of dollars)

States	Total income (a)			Percentage of aggregate total income			Surplus and gains on investments (c)			Surplus and gains on inventories (d)			Current income (e)			Aggregate current income 1919 to 1921 (f)			Percentage of current income 1919 to 1921 (g)		
	1919	1920	1921	1919	1920	1921	1919	1920	1921	1919	1920	1921	1919	1920	1921	1919 to 1921	1919 to 1921	1919 to 1921	1919 to 1921	1919 to 1921	
United States	165,759,052	171,555,046	182,754,147	22.31	22.45	22.70	1,040,704	1,036,545	1,042,445	1,040,704	1,036,545	1,042,445	1,040,704	1,036,545	1,042,445	2,329,552	2,329,552	2,329,552	35.76	35.76	35.76
Alabama	744,349	744,349	744,349	31.41	31.41	31.41	-16,256	-30,335	108,545	-16,256	-30,335	108,545	-16,256	-30,335	108,545	632,502	632,502	632,502	34.70	34.70	34.70
Arizona	240,594	240,594	240,594	39.25	39.25	39.25	7,708	4,846	42,513	7,708	4,846	42,513	7,708	4,846	42,513	192,410	192,410	192,410	34.16	34.16	34.16
Arkansas	577,851	577,851	577,851	34.11	34.11	34.11	-57,342	-81,829	77,376	-57,342	-81,829	77,376	-57,342	-81,829	77,376	474,556	474,556	474,556	35.45	35.45	35.45
California	2,730,840	2,730,840	2,730,840	33.54	33.54	33.54	289,706	289,706	1,482,368	289,706	289,706	1,482,368	289,706	289,706	1,482,368	2,441,134	2,441,134	2,441,134	32.46	32.46	32.46
Colorado	576,329	576,329	576,329	38.59	38.59	38.59	-81,005	104,161	1,482,368	-81,005	104,161	1,482,368	-81,005	104,161	1,482,368	495,324	495,324	495,324	35.69	35.69	35.69
Connecticut	979,141	979,141	979,141	29.30	29.30	29.30	-24,964	-181,695	107,322	-24,964	-181,695	107,322	-24,964	-181,695	107,322	954,176	954,176	954,176	31.68	31.68	31.68
Delaware	154,257	154,257	154,257	36.87	36.87	36.87	-17,357	-87,274	69,282	-17,357	-87,274	69,282	-17,357	-87,274	69,282	136,900	136,900	136,900	32.72	32.72	32.72
District of Columbia	1,441,413	1,441,413	1,441,413	36.50	36.50	36.50	-28,253	69,013	156,638	-28,253	69,013	156,638	-28,253	69,013	156,638	1,413,160	1,413,160	1,413,160	31.64	31.64	31.64
Florida	275,577	275,577	275,577	38.17	38.17	38.17	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	274,536	274,536	274,536	37.21	37.21	37.21
Georgia	1,331,749	1,331,749	1,331,749	38.59	38.59	38.59	50,204	65,415	47,795	50,204	65,415	47,795	50,204	65,415	47,795	1,281,544	1,281,544	1,281,544	35.77	35.77	35.77
Idaho	321,577	321,577	321,577	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	320,536	320,536	320,536	35.77	35.77	35.77
Illinois	4,699,044	4,699,044	4,699,044	29.36	29.36	29.36	-135,784	-135,784	1,682,709	-135,784	-135,784	1,682,709	-135,784	-135,784	1,682,709	4,563,260	4,563,260	4,563,260	35.45	35.45	35.45
Indiana	1,760,444	1,760,444	1,760,444	31.41	31.41	31.41	96,424	-82,023	249,221	96,424	-82,023	249,221	96,424	-82,023	249,221	1,664,021	1,664,021	1,664,021	35.16	35.16	35.16
Iowa	1,331,749	1,331,749	1,331,749	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,330,705	1,330,705	1,330,705	35.76	35.76	35.76
Kansas	1,331,749	1,331,749	1,331,749	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,330,705	1,330,705	1,330,705	35.76	35.76	35.76
Kentucky	521,353	521,353	521,353	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	520,312	520,312	520,312	35.76	35.76	35.76
Louisiana	817,520	817,520	817,520	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	816,479	816,479	816,479	35.76	35.76	35.76
Maine	742,918	742,918	742,918	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	741,877	741,877	741,877	35.76	35.76	35.76
Massachusetts	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	35.76	35.76	35.76
Michigan	2,057,076	2,057,076	2,057,076	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	2,056,035	2,056,035	2,056,035	35.76	35.76	35.76
Minnesota	2,057,076	2,057,076	2,057,076	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	2,056,035	2,056,035	2,056,035	35.76	35.76	35.76
Mississippi	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	35.76	35.76	35.76
Montana	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	35.76	35.76	35.76
Nebraska	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	35.76	35.76	35.76
Nevada	43,968	43,968	43,968	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	42,927	42,927	42,927	35.76	35.76	35.76
New Hampshire	2,057,076	2,057,076	2,057,076	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	2,056,035	2,056,035	2,056,035	35.76	35.76	35.76
New Jersey	2,057,076	2,057,076	2,057,076	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	2,056,035	2,056,035	2,056,035	35.76	35.76	35.76
New Mexico	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	35.76	35.76	35.76
New York	9,841,021	9,841,021	9,841,021	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	9,840,000	9,840,000	9,840,000	35.76	35.76	35.76
North Carolina	981,354	981,354	981,354	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	980,313	980,313	980,313	35.76	35.76	35.76
North Dakota	260,332	260,332	260,332	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	259,291	259,291	259,291	35.76	35.76	35.76
Ohio	3,899,379	3,899,379	3,899,379	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	3,898,338	3,898,338	3,898,338	35.76	35.76	35.76
Oklahoma	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	35.76	35.76	35.76
Oregon	590,544	590,544	590,544	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	589,503	589,503	589,503	35.76	35.76	35.76
Pennsylvania	9,899,379	9,899,379	9,899,379	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	9,898,338	9,898,338	9,898,338	35.76	35.76	35.76
Rhode Island	424,893	424,893	424,893	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	423,852	423,852	423,852	35.76	35.76	35.76
South Carolina	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	35.76	35.76	35.76
South Dakota	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	35.76	35.76	35.76
Tennessee	759,031	759,031	759,031	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	758,000	758,000	758,000	35.76	35.76	35.76
Texas	2,897,086	2,897,086	2,897,086	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	2,896,045	2,896,045	2,896,045	35.76	35.76	35.76
Vermont	179,079	179,079	179,079	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	178,038	178,038	178,038	35.76	35.76	35.76
Virginia	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	35.76	35.76	35.76
Washington	1,031,707	1,031,707	1,031,707	38.59	38.59	38.59	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	-1,041,413	-1,041,413	156,638	1,030,666	1,030,666	1,030,666	3		

TABLE C.—ESTIMATED NATIONAL WEALTH BY STATES (a)
(Expressed in thousands of dollars)

States	Estimated value of tangible property in—				
	1880	1890	1900	1912	1922
1	2	3	4	5	6
United States.....	\$43,422,000	\$64,693,494	\$87,588,567	\$184,435,608	\$313,021,560
Alabama.....	428,000	622,774	774,682	2,015,430	3,002,043
Arizona.....	41,000	188,881	263,015	456,726	1,314,291
Arkansas.....	286,000	455,147	604,218	1,721,900	2,599,617
California.....	1,343,000	2,533,734	3,218,573	8,536,485	15,031,734
Colorado.....	240,000	1,146,712	938,171	2,315,310	3,229,412
Connecticut.....	779,000	835,120	1,198,754	2,360,723	5,286,445
Delaware.....	136,000	175,679	211,711	304,918	625,765
Florida.....	120,000	389,489	355,743	936,885	2,440,491
Georgia.....	606,000	852,409	936,000	2,163,033	3,896,759
Idaho.....	29,000	207,897	276,375	578,999	1,533,941
Illinois.....	3,210,000	5,066,752	6,976,476	15,500,164	22,232,794
Indiana.....	1,681,000	2,095,177	2,606,493	5,358,951	8,829,726
Iowa.....	1,721,000	2,287,348	3,367,869	7,708,967	10,511,682
Kansas.....	760,000	1,799,343	1,938,000	4,580,202	6,264,058
Kentucky.....	902,000	1,172,232	1,365,131	2,277,004	3,582,391
Louisiana.....	382,000	495,302	815,158	1,989,813	3,416,860
Maine.....	511,000	489,134	682,134	1,017,739	2,006,531
Maryland.....	837,000	1,086,473	1,317,373	2,235,483	3,990,730
Massachusetts.....	2,623,000	2,803,645	4,358,904	6,381,142	12,980,839
Michigan.....	1,580,000	2,095,016	2,654,282	5,297,419	11,404,861
Minnesota.....	792,000	1,691,852	2,513,621	5,432,278	8,547,918
Mississippi.....	354,000	454,243	557,582	1,234,571	2,177,690
Missouri.....	1,562,000	2,397,903	3,244,533	5,727,948	9,981,409
Montana.....	40,000	453,135	613,897	1,132,758	2,223,189
Nebraska.....	385,000	1,275,686	1,626,203	3,720,813	5,320,075
Nevada.....	156,000	180,324	190,627	453,858	541,716
New Hampshire.....	363,000	325,129	472,146	657,904	1,374,135
New Jersey.....	1,305,000	1,445,285	2,733,593	6,011,310	11,794,189
New Mexico.....	49,000	231,460	268,285	495,118	851,836
New York.....	6,308,000	8,576,702	12,505,330	25,664,002	37,035,262
North Carolina.....	461,000	584,149	681,982	1,685,408	4,543,110
North Dakota.....	(b) 118,000	337,007	542,381	2,112,939	2,467,772
Ohio.....	3,238,000	3,951,382	5,019,004	9,123,301	18,489,552
Oklahoma.....		(c) 208,050	811,580	3,117,546	3,993,624
Oregon.....	154,000	590,396	632,880	2,057,439	3,419,450
Pennsylvania.....	4,942,000	6,190,747	9,315,140	16,225,953	28,833,745
Rhode Island.....	400,000	504,162	710,565	980,596	1,924,326
South Carolina.....	322,000	400,911	485,678	1,261,048	2,404,845
South Dakota.....		425,141	552,733	1,327,215	2,925,968
Tennessee.....	705,000	887,956	956,672	1,883,698	4,228,251
Texas.....	825,000	2,105,577	2,322,152	6,379,592	9,850,888
Utah.....	114,000	349,411	412,656	796,300	1,535,477
Vermont.....	302,000	265,567	329,917	504,818	842,040
Virginia.....	707,000	862,318	1,102,310	2,402,412	4,891,670
Washington.....	62,000	760,699	781,599	3,183,058	5,122,405
West Virginia.....	350,000	438,055	659,653	2,427,930	4,677,919
Wisconsin.....	1,139,000	1,833,309	2,405,354	4,327,770	7,866,081
Wyoming.....	54,000	169,774	281,432	355,732	976,239

(a) These data are taken from *Estimated National Wealth, 1922*, Department of Commerce, Bureau of the Census, Table 7, p. 25-27.

(b) North and South Dakota combined.

(c) Includes Indian Territory.

(a) Figures in columns 2, 3, and 4 from Lewis, Burrows, Income in the United States, Table III, p. 249. (b) Column 5 is the sum of the figures in columns 2, 3, and 4. (c) Column 6 is the sum of the figures in columns 2, 3, and 4. (d) Column 7 is the sum of the figures in columns 2, 3, and 4. (e) Column 8 is the sum of the figures in columns 2, 3, and 4. (f) Column 9 is the sum of the figures in columns 2, 3, and 4.

TABLE D.—TOTAL ANNUAL EXPENDITURES FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS (a)

States	Expenditures in				
	1880	1890	1900	1912	1922
1	2	3	4	5	6
United States.....	\$78,656,120	\$138,600,938	\$213,888,008	\$479,897,280	\$1,574,948,776
Alabama.....	500,000	890,000	923,464	3,708,418	12,827,945
Arizona.....	61,172	181,914	299,730	1,321,631	7,065,189
Arkansas.....	287,056	1,016,776	1,369,810	3,837,549	8,828,859
California.....	2,864,571	5,187,162	6,909,351	23,978,621	93,534,315
Colorado.....	395,227	1,681,379	2,793,648	6,527,569	19,366,016
Connecticut.....	1,408,375	2,157,014(c)	3,189,249	6,217,127	21,341,789
Delaware.....	207,281	275,000	453,670	605,000	2,465,708
Florida.....	114,895	516,533	765,777	2,327,395	9,768,506
Georgia.....	471,029	1,190,354	1,980,016	5,094,430	13,505,702
Idaho.....	38,411	169,020	400,043	2,959,124	9,536,267
Illinois.....	7,014,092	11,645,126	17,757,145	34,217,582	103,201,265
Indiana.....	4,491,850	5,245,218	8,182,526	16,443,654	63,358,907
Iowa.....	4,484,043	6,382,953	8,496,522	14,634,982	49,514,571
Kansas.....	1,818,337	4,972,967	4,622,364	11,158,256	34,319,377
Kentucky.....	1,069,030	2,140,678	3,037,908	6,699,872	14,149,189
Louisiana.....	411,858	817,110	1,135,125	4,608,927	16,452,576
Maine.....	1,067,991	1,327,553	1,712,795	3,151,917	8,266,289
Maryland.....	1,544,367	1,910,663	2,803,032	4,129,747	14,719,273
Massachusetts.....	4,983,900	8,286,062	13,826,243	22,502,935	57,332,711
Michigan.....	2,775,917	5,349,366	7,297,691	16,730,370	72,739,880
Minnesota.....	1,328,429	4,187,310	5,630,013	15,224,507	52,210,972
Mississippi.....	830,705	1,109,575	1,385,112	2,806,562	9,390,413
Missouri.....	3,675,364	5,434,262	7,816,050	14,720,866	40,986,065
Montana.....	78,730	364,084	923,310	3,354,934	13,976,623
Nebraska.....	1,108,617	3,376,332	4,403,222	8,757,288	30,687,770
Nevada.....	220,245	161,481	224,622	625,562	1,673,249
New Hampshire.....	565,339	844,333	1,052,202	1,826,643	4,883,243
New Jersey.....	1,873,465	3,340,190(c)	6,608,692	20,374,527	63,966,428
New Mexico.....	28,973	85,000	343,429	1,112,840	5,162,674
New York.....	10,296,977	17,543,880	33,421,491	57,935,136	183,421,841
North Carolina.....	376,062	714,900	950,317	3,777,125	22,079,183
North Dakota.....	245,000(b)	626,949	1,526,090	5,459,002	15,420,977
Ohio.....	7,166,963	10,602,238	13,335,221	28,858,413	116,568,994
Oklahoma.....			686,095	7,603,039	30,479,357
Oregon.....	307,031	805,979	1,594,420	6,095,111	13,629,983
Pennsylvania.....	7,369,682	12,928,422	21,476,995	42,557,986	109,468,075
Rhode Island.....	529,112	884,966	1,548,675	2,404,652	7,135,714
South Carolina.....	324,629	450,936	894,004	2,380,714	9,567,519
South Dakota.....	(b)	1,199,630	1,605,623	4,109,642	15,552,102
Tennessee.....	744,180	1,526,241	1,751,047	5,537,031	15,155,845
Texas.....	1,030,000(c)	3,178,300	4,465,255	14,497,750	52,452,075
Utah.....	132,194	394,685	1,094,757	3,626,686	9,959,777
Vermont.....	446,217	711,072	1,074,222	1,815,267	4,129,358
Virginia.....	946,109	1,604,509	1,989,238	5,262,130	21,212,606
Washington.....	112,615	958,111	2,375,753	10,526,931	29,633,324
West Virginia.....	707,553	1,198,493	2,009,123	5,030,940	18,616,312
Wisconsin.....	2,177,023	3,801,212	5,493,370	11,763,878	40,146,691
Wyoming.....	28,504	225,000(c)	253,551	997,022	5,067,272

(a) These data were furnished by the U. S. Bureau of Education.

(b) North and South Dakota combined.

(c) Approximate.

A Selected and Annotated Bibliography

The following should be looked upon as a selected rather than a comprehensive bibliography. In its preparation the object has been to select, from a large number of available references, and briefly annotate, a limited number of those of most value to students working in the field of this investigation. When several references dealing with the same topic have been available, the one covering it most adequately has been included. Those who wish more extensive bibliographies may refer to those cited.

References marked with an asterisk (*) have been particularly helpful in the development of this study. Their particular contribution is noted in the text or in the footnotes.

Books

1. *AYRES, LEONARD P. *An Index for State School Systems*. Department of Education, Russell Sage Foundation, New York City. 1920. 72 p.

Develops an index number to be used by state school systems in measuring progress from year to year and in comparing the educational situation in different states. Ten items enter into the composition of the index number, five of which have to do with financial outlay for schools. The study has been widely used.

2. *BAGLEY, WILLIAM C. AND KEITH, JOHN A. H. *The Nation and The Schools*. The Macmillan Company, New York, 1920. 364 p.

A collection of facts and arguments designed to show that the national government has certain educational functions which it should discharge. Advocates the extension of federal support for education and the establishment of a Department of Education.

3. BLACKMAR, FRANK W. *The History of Federal and State Aid to Higher Education in the United States*. Bureau of Education, Circular of Information,

No. 1, 1890. (Whole number 161.) Government Printing Office, Washington, D. C., 1890. 342 p.

Traces development of idea of national aid for education as a logical outgrowth of colonial educational policies and a principle established in the earliest days of the republic, as evidenced by federal land grants, the establishment of the Bureau of Education, etc. Quotes opinions of Washington and other early American statesmen.

4. *CLARK, HAROLD F. *The Effect of Population upon the Ability to Support Education*. School of Education Bulletin. University of Indiana. September, 1925. Bloomington, 29 p.

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5. *CUBBERLEY, E. P. *National Government and Education*. In Monroe's Cyclopedia of Education. Macmillan Company. 1913. New York.

An authoritative sketch of our national educational policy as it has developed from the early land ordinances of 1785 and 1787, through the later land grants for common schools and the land-grants colleges, to the still more recent grants of money for education. Notes certain bills which have been introduced in Congress providing for further money grants. Published in 1913, therefore makes no mention of the Smith-Lever, Smith-Hughes, and other acts and proposals of recent years.

6. GERMANN, GEORGE B. *National Legislation Concerning Education*. Bureau of Publications, Teachers' College, Columbia University. 1899. New York. 149 p.
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7. *HAIG, ROBERT MURRAY AND STRAYER, GEORGE D. *The Financing of Education in the State of New York*. The Macmillan Company, New York, 1923. 205 p.
 One of the volumes of the Educational Finance Inquiry Commission. Assembles comprehensive data bearing upon school finance in the state of New York and develops new techniques for use in analyzing these data designed to serve as models for workers in the field of school finance.
8. JUDSON, HARRY PRATT. "Federal Control of Education" in *Our Federal Republic*. Chapter VIII, pp. 212-257. Macmillan, 1925. New York. 277 p.
 Traces history of national aid for education including the early land ordinances and attempts to establish a national university, the gradual growth of our system of federal land grants, and the development therefrom of policy of national money grants for education. Argues that education at public cost is "wholly a matter for the states" and that money subsidies as provided for in the Smith-Hughes and Smith-Lever Acts are unconstitutional.
9. KANDEL, I. L. *Federal Aid for Vocational Education*. A Report to the Carnegie Foundation for the Advancement of Teaching. Bulletin Number Ten. The Carnegie Foundation for the Advancement of Teaching. New York City. 1917. 127 p.
 Deals with evolution of policy of federal aid to state education and describes legislative procedure through which this policy was developed. Inquires as to the original intentions of Congress in enacting first Morrill Act. Concludes bill was intended primarily to aid the farmers rather than to be a part of a serious educational program.
10. KEITH, JOHN A. H. AND BAGLEY, WILLIAM C. *The Nation and the Schools*. The Macmillan Company. 1920. New York. 364 p. See reference number 2.
11. *KING, WILLFORD ISBELL. *The Wealth and Income of the People of the United States*. The Macmillan Company, New York, 1922. 278 p.
 Presents estimates as to the general supply and distribution of wealth and income in the nation. Brings together and coordinates results of a number of studies. Probably the best study until the recent investigations of the National Bureau of Economic Research.
12. KNAUTH, OSWALD W. *Distribution of Income by States in 1919*. Harcourt, Brace and Company, New York, 1922. 30 p.
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13. *LEVEN, MAURICE. *Income in the United States*. National Bureau of Economic Research, New York. 1925. 306 p.
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14. MACDONALD, AUSTIN F. *Federal Subsidies to the States*. A Study in Ameri-

can Administration, World Printing Company, Philadelphia, 1923. 122 p.

An investigation of the American federal subsidy system. Concludes that no coherent principles have been followed in the past in the development of this legislation. Suggests principles that should guide Congress in the enactment of future subsidy legislation. Looks upon subsidies to state governments as an essential part of American federal administration.

15. MAHONEY, ROBERT H. *The Federal Government and Education*. A dissertation submitted to the Faculty of Philosophy of the Catholic University of America, Washington, D. C., in partial fulfillment of the requirements for the degree of Doctor of Philosophy. 80 p.

A study of the evolution of national interest in education and an examination, as to the effects on the welfare of the American school, of the recent trends in federal educational legislation.

16. *MITCHELL, WESLEY C. AND OTHERS. *Income in the United States*. Vol. I. Harcourt, Brace and Company, New York. 152 p.

A brief and popularized presentation of the data presented in the more detailed volume cited as reference 17.

17. MITCHELL, WESLEY C. AND OTHERS. *Income in the United States. Its Amount and Distribution 1909-1919*. Volume II. Detailed Report. National Bureau of Economic Research. New York, 1922. 440 p.

The most comprehensive estimate of the total annual income of the people of the United States, made to date. Presents in detail the methods used in ascertaining this total.

18. *MORT, PAUL R. *The Measurement of Educational Need*. A Basis for Distributing State Aid. Bureau of Publications, Teachers College, Columbia University, Contributions to Education, No. 150. New York. 1924. 84 p.

Develops a technique for deriving a measure of the educational need of the component parts of a state. Educational need is defined as a composite of the elements affecting the cost of a minimum public educational offering in a community. Technical, pioneer study. Also see reference cited on p. 66.

19. NATIONAL INDUSTRIAL CONFERENCE BOARD. *Taxation and National Income*. Research Report Number 55, October, 1922. The Century Company, New York, 1922. 86 p.

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21. ————. *Tax Burdens and Public Expenditures*. New York, 1925. 70 p.

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22. *NEWCOMER, MABEL. *Financial Statistics of Public Education in the United States 1910-1920*. (Vol. VI.) The Macmillan Company, New York, 1924. 188 p.

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23. ORFIELD, MATTHIAS NORDBERG. *Federal Land Grants to the States with Special Reference to Minnesota*. Studies in the Social Sciences. Number 2. Bulletin of the University of Minnesota. March, 1915. Minneapolis.
A detailed study of federal land grants for educational and other purposes. Deals with the evolution of the land-grant policy of the national government, and the administration of the land grants by the states, as typified by the state of Minnesota.
24. *REISNER, EDWARD H. *Nationalism and Education Since 1789*. The Macmillan Company, New York, 1922. 575 p.
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25. *SELIGMAN, EDWIN R. A. *Essays in Taxation*. The Macmillan Company, New York, 1921. 806 p.
A fundamental and authoritative text in the field of taxation.
26. *STRAYER, GEORGE D. AND HAIG, ROBERT MURRAY. *The Financing of Education in the State of New York*. The Macmillan Company, New York, 1923. 205 p. See reference, No. 7.
27. *SWIFT, FLETCHER H. *A History of Public Permanent Common Schools Funds in the United States*. Henry Holt & Company, New York, 1911.
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Attacks financial argument for federal aid to education on ground that poorer states are not in need of aid. Quotes figures to show that most of these states are devoting too small a proportion of wealth to education.
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50. Hearings. *Extracts from Hearings before the Joint Committee on the Reorganization of the Administrative Branch of the Government Congress of the United States Sixty-eighth Congress First Session* on S. J. Res. 282 Sixty-seventh Congress. A resolution to amend the resolution of December 29, 1920, entitled "Joint Resolution to create A Joint Committee on The Reorganization of The Administrative Branch of the Government," January 25, 26, and 29, 1924. Government Printing Office, Washington, 1924. 629 p.
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