SCHOOL FINANCE AND RELATED PROBLEMS IN ARIZONA

By
EMIL L. LARSON

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ERRATA

Page 10—Last two lines at bottom of page should be interchanged.

Page 32—Under (A) following "For the year 1931" omit "Tax money, ,062,376.00."

Page 48—Federal allotments for road construction fiscal year ended 'une 30, 1932, $3,536,272.00.

Page 65—"i" should read: "i. Percent of State tax chargeable to University (e) ÷ (a), 11.48."

CONTENTS

TABLES

CHARTS

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INTRODUCTION

There is need for orientation and perspective with regard to public finance, and especially that phase which is concerned with expenditures for education. To secure this perspective, this over-view of the whole field, is quite a difficult task. Statements with regard to school expenditures are often quite conflicting. Data on different phases are often in widely scattered sources and the coordination and correlation of facts are not easy. The necessity for a complete and unified picture was never greater than at present.

The purpose of this booklet is to make available to interested citizens of the State — to school men and taxpayers in particular — information concerning the most important elements of school finance in Arizona. Expenditures, sources of revenue, allocation of public money, and suggestions concerning solutions of pressing problems have been treated rather briefly but, the writer hopes, completely enough to indicate the essential facts. Sources of information have been indicated throughout the discussion. Where complete information has not been available or where estimates have been necssary the discussion has attempted to indicate such deficiency. The writer regrets that these short-comings exist.

The present study is not a finished product. It does, however, suggest procedures which can be followed up in succeeding years. It outlines techniques which the school man may and should use to judge and to aid his own community. It may develop familiarity with sources of information which may prove helpful to all who are concerned with the best education possible for the children of the State.

I. THE PRESENT SITUATION

WHAT IS THE EXTENT OF EXPENDITURES FOR GOVERNMENTAL PURPOSES IN THE UNITED STATES?

Various reports with respect to expenditures of the various governmental units appear from time to time. The totals of these reports do not always coincide but they usually approximate each other. One reason for differences in figures is that some reports are based on tax returns while others use total expenditures of revenue from all sources. A second possibility of difference is introduced when gross expenditures are used. The same expenditures are credited to both the Federal Government and to states, or to states and local units. The inclusion of bond interest and redemption brings about the possibility of counting money as an expenditure twice — once when the building is constructed or some other form of capital outlay is undertaken and paid for with borrowed money and again when the debt so assumed is repaid. For example in 1927 the gross expenitures by federal, state, and local governments were $12,189,900,- 000, including $1,519,200,000 for debt redemption and $1,470,200,000 for interest. If these latter items are omitted the net expenditure for all public purposes is reduced to $9,200,500,000, which approximates the total tax collections of the same year, which amounted to $9,059,000,000. For the nation as a whole, tax collections give a fair idea of net expenditures although this does not provide a true picture for the state and local units. Such reports as are available should be carefully studied and interpreted.

The gross expenditures of the Federal Government for the fiscal year which ended June 30, 1932, were slightly in excess of five billion dollars. Estimates from various sources indicate that states and local governments bring the gross expenditures to twelve or twelve and one-half billion dollars. Of the tax totals in 1928 the Federal Government collected 34.4 percent; the state governments 15.8 percent; and the municipal, county, and other local governments 49.8 percent. The estimates of various economists in 1932 indicate the Federal Government as collecting 40 percent of the total taxes, the states 10 percent, and local governments 50 percent.

TABLE 1.—WEALTH, INCOME, AND TAX COLLECTIONS IN THE UNITED STATES FROM 1890 TO 1931.

Year	Tangible wealth		Current income		Tax collections		Percent tax collections are of income
1890	(1)	$ 65,037,091,000	(3)	$12,082,000,000			
1900	(1)	88,517,307,000	(3)	17,965,000,000			
1912	(1)	186,299,664,000	(3)	30,600,000,000			
1913			(4)	33,200,000,000	(2)	$ 2,194,000,000	6.61
1919			(4)	67,800,000,000		7,465,000,000	11.01
1921			(4)	59,150,000,000		8,838,000,000	14.94
1922			(4)	63,600,000,000		7,502,000,000	11.80
1923			(4)	74,200,000,000		7,234,000,000	9.75
1924	(1)	335,000,000,000	(4)	75,100,000,000		7,821,000,000	10.41
1925			(4)	81,900,000,000		7,891,000,000	9.63
1926			(4)	84,150,000,000		8,555,000,000	10.17
1928	(2)	353,520,000,000	(3)	89,419,000,000		9,288,845,000	10.39
1929	(2)	361,837,000,000	(2)	85,200,000,000		9,759,000,000	11.45
1930	(2)	329,738,000,000	(2)	71,000,000,000		10,266,000,000	14.46
1931			(5)	52,446,000,000		(10,000,000,000?)	(20.00?)

The totals of tax collections by all governmental agencies in the United States for a number of years are as follows: [1]

1913	...$2,194,000,000	1925	...$7,891,000,000	
1919	... 7,465,000,000	1926	... 8,555,000,000	
1921	... 8,838,000,000	1928	... 9,288,845,000	
1922	... 7,502,000,000	1929	... 9,759,000,000	$13,062,100,000 [2]
1923	... 7,234,000,000	1930	...10,266,000,000	
1924	... 7,821,000,000			

WHAT IS THE RELATION OF EXPENDITURES TO NATIONAL WEALTH AND NATIONAL INCOME?

We should note carefully whether or not expenditures of various kinds have increased more rapidly than have national wealth and national income. If expenditures are unduly large they will tend to reduce income or wealth, or both. Data concerning the relation of wealth, income, and taxes in the United States are given in Table 1.

Sources of data:

(1) U. S. Bureau of the Census
(2) National Industrial Conference Board
(3) National Bureau of Economic Research
(4) Average of estimates by National Industrial Conference Board and National Bureau of Economic Research
(5) *The Business Week.*

Note: Estimates of income by different authorities:

1929—National Industrial Conference Board.....$85,200,000,000
    The Business Week....................... 89,200,000,000
    David R. Ingalls........................... 83,400,000,000
1930—National Industrial Conference Board..... 71,000,000,000
    The Business Week....................... 65,664,000,000

These data are summarized in *N. E. A. Research Bulletins,* 4: 242, November, 1926; 6: 278, November, 1928; and 8: 187, September, 1930. Data for 1929, 1930, and 1931 were secured by personal correspondence with W. G. Carr, Director of Research Division of the National Education Association.

The data of this table would seem to justify the conclusion that governmental expenditures as represented by taxes for the years from 1913 to 1930 did not increase unduly. In only two years, 1921 and 1930, are taxes a very large proportion of the income and this large proportion is due partially to the decrease in income. In fact it would be quite difficult to state whether the burden of taxes is more noticeable because of the increase in expenditures

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[1] Figures for years 1913-1928 from *Cost of Government in United States,* National Industrial Conference Board, quoted from *N.E.A. Research Bulletin* 6: 278 and *N.E.A. Research Bulletin* 8: 187.

[2] Total expenditures. National Industrial Conference Board.

or because of the decrease in income. The latter factor, however, is probably the more potent one.

HOW DO TAXES HERE COMPARE WITH THOSE IN FOREIGN COUNTRIES?

Comparisons of taxes may be made in two ways. One is to note the trends over a period of years. This has already been done in the preceding section. The other is to compare the tax rates with those in other communities, other states, or other nations. Data for the year 1928 are available for some of the leading nations of the world. In considering these data it should be remembered that both wealth and income per person are greater in this country than in others with which comparisons are being made. The last four years have adversely affected this country but have also influenced others.

The proportions of the national income devoted to taxes in various countries in 1928 were as follows:

Great Britain	22.0	Australia	18.4
Norway	20.0	Hungary	18.0
Italy	19.2	Austria	17.3
Canada	19.2	Japan	14.4
France	18.5	United States	10.2

The presentation of these data should not be interpreted as a suggestion that we should levy higher taxes. The facts are presented in answer to the statement sometimes made that taxes are higher in the United States than in other nations of the world.

FOR WHAT PROPORTION OF THE NATIONAL EXPENDITURES ARE THE PUBLIC SCHOOLS RESPONSIBLE?

School support usually comes from the direct property tax. Expenditures for education are readily checked and easily noticed. Occasionally the impression is created that school expenditures are responsible for the major portion of the total governmental expenditures. A dispassionate analysis of the total situation will be helpful.

Data for a number of years are available with regard to school costs, total taxes, and national income. The facts concerning total taxes and income have already been indicated in Table 1. The facts concerning school costs and their relation to both income and to total taxes are indicated in Table 2.

TABLE 2.—PUBLIC SCHOOL COSTS, TOTAL TAXES, AND RELA-
TION OF SCHOOL COSTS TO TOTAL TAXES AND TO NATIONAL
INCOME IN THE UNITED STATES FOR VARIOUS PERIODS
FROM 1890 TO 1930.

1 Year	2 Costs of public, elementary, and secondary schools	3 Total taxes	4 Percent school costs are of total taxes 2 ÷ 3	5 Percent school costs are of national income
1890	$ 140,506,715			1.16
1900	214,964,618			1.20
1912	482,886,793			1.58
1913	521,546,375	$ 2,194,000,000	23.77	1.57
1919	899,914,649*	7,465,000,000	12.06	1.33
1921	1,308,411,253*	8,838,000,000	14.80	2.21
1922	1,580,671,296	7,502,000,000	21.07	2.49
1923	1,700,707,616*	7,234,000,000	23.51	2.29
1924	1,820,743,936	7,821,000,000	23.28	2.42
1925	1,946,096,912	7,891,000,000	24.66	2.38
1926	2,026,308,190	8,555,000,000	23.69	2.41
1928	2,184,336,638	9,288,845,000	23.51	2.44
1929		9,759,000,000		
1930	2,180,000,000 (c)	10,266,000,000	21.24	3.07

Sources of data:
  (a)   Secondary   4: 242 November, 1926
        N.E.A. Research Bulletin 6: 278 November, 1928
                                     8: 187 September, 1930
  (b)   The original sources of data:
        In column 2 from Bureau of Education.. Data for 1919, 1921,
        and 1923 are estimates.
        In 1928, $264,296,923 could be added as cost of public colleges
        and universities.   Then percentages in columns 4 and 5
        would become 26.36 and 2.74.
      In column 3 from National Industrial Conference Board.
        for costs of public higher education for 1930.
  (c)   *School and Society,* 33: 581-582, May 2, 1931.   Add $264,300,000.

The data of this table show that school expenditures have been slightly less than 25 percent of all governmental expenditures as represented by taxes. The proportion would really be somewhat less than this if total expenditures from all sources were considered as most of the support of schools comes from direct property taxes. The figures as given in Table 2 represent the average for the whole United States. In various states the percentage which school costs are of taxes and of income are, of course, above the national average. In Arizona, for example, in 1928 income, taxes, and school costs were as follows:[1]

(a) Estimated income..........................$277,198,900
(b) Taxes collected by Federal Government.... 3,928,620
(c) Taxes collected by State government...... 7,958,977
(d) Taxes collected by local governments
      (counties, cities, special districts)........ 15,393,000
(e) Total taxes.............................. 27,280,617
(f) School costs — elementary and secondary.. 9,288,845
(g) School costs — elementary, secondary and
      collegiate 10,171,145
(h) Percent elementary and secondary school
      costs (f) are of total taxes............. 34.02
(i) Percent total school costs (g) are of total
      taxes 37.28
(j) Percent total taxes are of income......... 9.88 [2]
(k) Percent elementary and secondary school
      costs are of income (f)÷(a)............ 3.33
(l) Percent total school costs are of income
      (g)÷(a) 3.68

Tax totals serve as a defensible basis for computing relative expenditures by states but a more accurate means must be used in determining total governmental costs in states and smaller governmental units. The data so far assembled indicate that Arizona is somewhat above the national average in expenditures for schools due largely to her rapid growth and the consequent need for school buildings.

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[1] Data from same sources as those in Tables 1 and 2.

[2] 10.39 in United States.

WHAT ARE THE TOTAL EXPENDITURES FOR ALL LOCAL (NON-FEDERAL) GOVERNMENTAL PURPOSES IN ARIZONA?

It is somewhat difficult to secure absolutely accurate data concerning public expenditures for governmental purposes in Arizona. Data concerning taxes are available for all the years from 1913 to 1931 inclusive. For the years 1929, 1930, and 1931 the taxes listed for collection in Arizona were as follows:

	1929 [1]	1930 [2]	1931 [3]	1932 [3]
State	$ 6,518,285	$ 5,719,566	$ 6,409,928	$ 5,680,109
County	8,919,835	8,967,722	9,034,340	8,168,666
Special districts.....	4,232,191	4,279,503	3,680,027	2,511,135
Cities	2,614,059	2,712,567	2,677,262	2,455,077
Total............	$22,284,370	$21,679,358	$21,801,557	$18,814,987

[1] Data from Table 25, Tenth Report of State Tax Commission, pp. 102-103.
[2] Data from Table 26, Tenth Report of State Tax Commission, pp. 102-103.
[3] Data from State Tax Commission.

Two things should be noted. The taxes listed for 1929 serve as the basis for expenditures for the fiscal year 1929-1930; those listed for 1930 are the basis for expenditures for the fiscal year 1930-1931; and taxes listed for 1931 are the basis for expenditures for the year 1931-1932. (See Tenth Report of State Tax Commission, 1930, p. 100.) The second important fact which is worthy of attention is that the tax totals which are listed are not identical with expenditures. For example, in cities returns from municipally owned public utilities are disregarded.

The relation of taxes and expenditures should be made clear in fairness to all agencies 'which are supported by public funds. If any one activity — as schools, for example — derives its major support from direct property tax it will, on superficial examination, appear to be responsible for a very large proportion of total expenditures. An activity or function of government which derives its support from so-called " non-tax " sources will appear to be responsible for less of the total expenditures than it is justly to be charged with.

Some illustrations will help to make this idea clear. The expenditures of the State for the years 1922 to 1931 illustrate this point very well. The data follow:

Year	Total state expenditures	Tax money	Percent	Non-tax money	Percent
1923	$ 8,491,680.88	$4,767,156.12	56.14	$3,724,524.76	43.86
1924	7,765,663.22	4,232,365.88	54.49	3,523,297.34	46.51
1925	7,738,050.56	4,878,584.94	63.05	2,859,465.62	36.95
1926	7,859,003.28	5,427,546.63	69.06	2,431,456.65	30.94
1927	7,593,664.71	5,225,599.08	68.81	2,368,065.63	31.19
1928	8,863,819.44	6,524,786.24	73.61	2,339,033.20	26.39
1929	11,194,981.22	6,884,179.22	61.52	4,310,802.00	38.48
1930	12,047,153.27	6,317,977.23	52.43	5,729,276.04	47.57
1931	14,370,366.41	7,102,592.28	49.43	7,267,774.13	50.53
Average 1923–1931..............			59.86		40.14

Data are from the reports of the State Auditor as follows:

1923—Twelfth	Report, page	58, insert.
1924—Thirteenth	Report, page	55, insert.
1925—Fourteenth	Report, page	75, insert.
1926—Fifteenth	Report, page	81, insert.
1927—Sixteenth	Report, page	85, insert.
1928—Seventeenth	Report, page	105, insert.
1929—Eighteenth	Report, page	95, insert.
1930—Nineteenth	Report, page	105, insert.

1931—From state auditor's office.
Material for previous years not readily available for segregation.

It is quite evident that "non-tax" money is a considerable proportion of the money available for state purposes. Within recent years this proportion has been increasing because of the returns from the gasoline tax which is listed as "non-tax" revenue.

As illustrative of the effect of this type of reporting expenditures it will be of interest at this point to note the proportion which State expenditures for educational purposes are of the total expenditures for all purposes. Thus in the fiscal year which ended June 30, 1931, Arizona (the state government) expended a total of $14,370,366.41. Of this amount $7,102,592.28 was tax money and $7,267,774.13 was non-tax money. Arizona, *i.e.* the State government, expended for educational purposes $4,119,452-.19. This amount was *28.67 percent of the total money expended by the State* ($4,119,452.19 ÷ $14,370,366.41). Of the amount spent for education $3,455,137.65 was from tax sources and $664,-

314.54 from non-tax sources. The expenditures for education from tax sources were 48.65 percent of the total state expenditures from tax sources ($3,455,137.65 ÷ $7,102,592.28). Data from 1923 to 1931 indicate clearly that education has been supported largely from tax funds. The figures have been drawn from the same sources as those concerning total state expenditures of the preceding paragraph. The data follow:

Year	Percent of State expenditures for education which came from tax money	Percent educational expenditures of State are of total expenditures of State government	Percent educational expenditures of State are of net tax money expended
1923	72.2	36.92	47.44
1924	71.5	36.93	48.64
1925	83.2	41.16	54.27
1926	83.4	44.52	53.73
1927	84.1	42.07	51.46
1928	86.5	36.08	45.91
1929	81.9	32.62	43.18
1930	83.3	33.29	52.90
1931	83.9	28.67	48.65

During the last seven years approximately five-sixths of the educational expenditures of the State of Arizona as a unit have come from tax sources. The expenditures for education during the last four years have been about half of the direct property tax collected by the State as an administrative unit and a third or less of the total expenditures of money from all sources.

Illustrations concerning receipts and expenditures of counties tell the same story. They emphasize the fact that tax collections and total expenditures do not represent the same amounts. The facts concerning receipts from taxes and from other sources suggest the advisability of considering total receipts in estimating expenditures. In the following tabulation data for the last four years show available revenue for general county purposes.[1]

Between $1,500,000 and $2,000,000 of "revenue from other sources" represents money from the state school fund. It has already been recorded as an expenditure, and, consequently, should not be counted a second time. Eliminating this amount still leaves a net sum of approximately $2,000,000 or more each year which comes from other than county taxes. Half of this is the proportionate share of the gasoline tax, which belongs to the

[1] Data from Tenth Report of State Tax Commission, 1930, pp. 100-101.

various counties. The outstanding fact is that the total amount available for expenditure each year by the counties is from 20 to 40 percent more than the amount listed as property taxes in the counties of the State.

Year ended	Taxes levied	Revenue from other sources	Total available
June 30, 1928	$7,886,788	$3,620,523	$11,507,311
June 30, 1929	8,048,608	3,790,152	11,838,760
June 30, 1930	8,919,835	3,935,951	12,855,786
June 30, 1931	8,967,722	4,366,508	13,334,230
June 30, 1932	9,034,340	(Data not available)	

The situation with respect to cities and towns is similar to that for the counties. Cities have other sources of revenue than taxes. Available data for 31 incorporated cities and towns follow:

Year	Taxes levied	Receipts from other sources	Total available
1923-1924 [1]	$1,955,299.95	$1,323,318.00	$3,278,617.95
1924-1925 [1]	1,854,582.67	1,383,044.00	3,237,626.67
1925-1926 [2]	1,929,365.00	1,766,850.00	3,696,215.00
1926-1927 [2]	2,008,213.00	2,031,548.00	4,039,761.00

[1] Seventh Tax Commission Report, 1926, pp. 117-118.
[2] Eighth Tax Commission Report, 1928, pp. 101-102.

Unfortunately, data for later years are not readily available. Limited investigation reveals little change from the conditions shown above. Fourteen of these cities and towns have municipally owned public utilities. With the realization that the inclusion of these data would tend to militate against the validity of the data the writer omitted these towns and computed the relative amounts that should be added to the listed tax levies in the remaining cities to determine the total amounts available for expenditures. The results indicate that receipts from other

sources than taxes are approximately 40 percent of the revenue from taxes. The actual percentages are as follows:

1923-1924......40.8		1925-1926......40.9	
1924-1925......23.9		1926-1927......44.6	

In view of these facts it would probably be reasonable to suggest that *receipts for municipal expenditures in cities and towns of Arizona equal the amount of taxes levied plus an additional 25 percent from other sources.*

The prime purpose on the part of a governmental unit — state, county, city, or school district — in levying taxes and securing receipts from other sources is to provide for necessary expenditures. Few units have any large balances to carry over from year to year. Hence, a fairly accurate estimate of expenditures is secured when we have a complete statement of the money available for spending. But *such statement of receipts must consider other sources of governmental income than merely property taxes.*

The data concerning taxes as given on page 12 indicate expenditures approximating $22,000,000. This, however, is not a true picture of expenditures by the four types of governmental units in Arizona. The data for the fiscal year which ended June 30, 1930, indicate a sum considerably in excess of this amount. The pertinent data with respect to receipts and expenditures follow:

I. State of Arizona:
    (1) Total revenue.............$17,708,047.11
    (2) Tax anticipation bonds
        (Premium included)......   4,001,255.60

        Non-borrowed revenue....$13,706,791.51

    (3) Total expenditures........$17,053,265.83
        Tax anticipation bonds
           (Interest $77,908.82).....   4,000,000.00

        Net expenditures.......... $13,053,265.83

'Nineteenth Report of State Auditor, 1930, p. 87.
'*Ibid.,* 1930, p. 17.
'*Ibid.,* 1930, p. 98.

II. Counties:
    (4) Total revenue available:
      Taxes
      (1929 levy)..$8,919,835.00
      Other
      sources. . . . 3,939,951.00

                              $12,855,786.00
    (5) Receipts from state school
        fund (already counted
        with state total):
      State appor-
        tionment . $1,875,654.15
      Vocational
        education .   60,728.83

                             $1,936,377.98

      Net receipts available for
        expenditures... .. .. $10,919,408.02

III. Special districts:
    (6) District school funds......$ 4,787,867.35
    (7) Special building levy......   127,781.72
    (8) Sale of bonds............ 1,047,608.78
      Salvage of buildings......   34,690.13

      Total receipts............ $ 5,997,947.98

IV. Cities and Towns:
    (9) Taxes (1929 levy).........$ 2,614,059.00
      Plus 25 percent from other
        sources.... . ...   653,514.75

      Total receipts............ $ 3,267,573.75

V. Total...... ... . $31,238,195.58

[1] Tenth Report of State Tax Commission, 1930, pp. 100-101.
[2] Tenth Biennial Report of State Superintendent of Public Instruction, 1930, pp. 170-171.
[3] *Ibid.,* 1930, p. 206.
[4] *Ibid.,* 1930, pp. 170-171.
[5] *Ibid.,* 1930, pp. 170-171 and 206.
[6] Tenth Report of State Tax Commission, 1930, pp. 102-103.

This method of determining expenditures is justly open to several criticisms. The first one is that receipts are not necessarily the same as expenditures as no account is taken of balances. The writer realizes this very readily. The error thus introduced, however, is comparatively small. Year after year the discrepancy thus introduced will vary from less than 1 to 5 percent.   In *I.* both receipts and expenditures for Arizona are given, the difference between the two being $653,525.68 or 5.01 percent.   In *II.* and *III.* the total receipts from district and county taxes for the use of schools in 1930 amounted to $12,229,002.09; the expenditures were $12,230,764.70, a difference of .014 percent.   Comparisons of data for other years show slightly larger differences.   From the viewpoint of general perspective in regard to financial conditions the writer feels justified in stating that *usually receipts from various sources whether those sources be taxes, licenses, fees, or other similar plans will tend to approximate disbursements.* Using this type of estimate is not as satisfactory as taking a record of actual expenditures but this method gives a very close approximation to the final actual expenditures. The writer has been unable in the limited time at his disposal to secure absolutely accurate statements of expenditures of all governmental units.

A second criticism is that an expenditure may be counted twice. This may occur when money is apportioned by the state to the county or by the county to school districts. A stronger possibility of counting an expenditure twice, however, occurs in the case of borrowed money. For example, in the year 1930 a district decided to erect a school building costing $40,000. The building was constructed and financed by means of a bond issue. Thus in 1930 the district receipts show the amount in maintenance raised by taxes and other means and the amount in buildings raised by bonds; the expenditures are equal to the total of the two amounts. If these bonds are paid off at the rate of, $4,000 per year it becomes necessary to levy each year a tax sufficient to care for the following: (a) the expense of maintaining the school each year; (b) interest on the outstanding bonds; (c) retirement of $4,000 worth of bonds. The first two are new expenditures. The last, however, is merely a payment of an expenditure made in 1930 and which is now being redeemed. A farmer or merchant who borrowed $2,500 in 1928 and who is paying off this debt at the rate of $500 each year is in a position similar to that of the school district just mentioned. The obvious

and often painful fact, however, is that the money to take care of these necessary disbursements must be raised each year even though the original expenditure was based on borrowed money.

The explanation just given may serve to account for the difference in the total expenditures of the state as given in this report and on page 105 of the Nineteenth Report of the State Auditor (also given on pp. 16-17 of this report). The complete data follow:

(1)	Total expenditures............		$17,053,265.83
(2)	Tax anticipation bonds........	$4,000,000.00	
(3)	Interest on bonds.............	77,908.82	
(3)	County bond land fund........	64,107.49	
(3)	Permanent school fund........	117,803.89	
(3)	Redemption — Territory and state funded debt...........	703,000.00	
(3)	University timber fund........	18,292.36	
(4)	Redemption of public debt....	25,000.00	5,006,112.56
(5)	Net total expenditures........		$12,047,153.27

[1] Nineteenth Report of State Auditor, 1930, p. 98.
[2] *Ibid.*, p. 98.
[3] *Ibid.*, p. 79.
[4] *Ibid.*, p. 41.
[5] *Ibid.*, p. 105.

While funds for payment of interest and retirement of bonds are " non-productive " with respect to present expenditures they must be provided in the present budget. Further discussion of these items must be reserved for a later section. At this point it might be well to call attention to the fact that while interest and bond redemption represent money that must be raised they are not really " current expenditure." They represent obligations of the past which must be met in the present.

WHAT HAS BEEN THE TREND IN TOTAL EXPENDITURES IN ARIZONA FOR A NUMBER OF YEARS?

The data on total taxes and on total expenditures as given in the preceding section do not coincide. For the fiscal year which ended June 30, 1930, the total taxes levied in the State by the four administrative units were slightly in excess of $22,000,000; the expenditures based on available receipts totaled more than

TABLE 3.—TAXES FOR ALL PURPOSES IN ARIZONA FROM 1913 TO 1932.

Year	Net valuation	State taxes	County taxes	Special district taxes	City and town taxes	Total taxes for all purposes
1913	$375,862,414	$1,860,518	$2,557,517	$ 574,894	$ 557,371	$ 5,550,302
1914	407,267,393	1,812,339	2,545,564	679,472	721,967	5,759,344
1915	420,532,411	2,270,875	2,992,595	786,034	774,180	6,823,686
1916	486,406,518	1,945,626	3,099,301	837,966	857,048	6,739,942
1917	697,526,619	3,731,767	3,551,816	1,191,870	1,087,486	9,562,941
1918	834,020,532	3,252,680	4,172,973	1,294,684	1,279,571	9,999,909
1919	855,224,720	5,131,348	5,026,881	2,065,102	1,445,260	13,668,592
1920	884,455,682	4,201,164	6,073,479	3,279,492	1,883,847	15,437,983
1921	830,536,582	6,062,917	6,894,955	2,535,725	1,937,960	17,431,558
1922	732,021,286	3,733,308	6,530,067	2,366,374	1,987,412	14,617,163
1923	697,002,006	4,007,761	7,104,898	3,143,217	1,955,299	16,211,177
1924	649,879,308	3,639,324	6,454,954	3,206,944	1,854,582	15,155,806
1925	640,895,855	4,998,987	6,921,198	3,835,819	1,929,365	17,685,369
1926	653,163,397	4,376,194	7,229,525	4,082,482	2,008,213	17,696,414
1927	673,127,177	5,990,832	7,886,788	4,048,274	2,122,166	20,048,060
1928	681,736,018	5,249,367	8,048,608	5,249,850	2,394,216	20,942,041
1929	700,890,801	6,518,285	8,919,835	4,232,191	2,614,059	22,284,370
1930	714,945,809	5,719,566	8,967,722	4,279,503	2,712,567	21,679,358
1931	674,729,235	6,409,928	9,004,340	3,680,027	2,677,262	21,801,537
1932	473,342,415	5,680,109	8,168,666	2,511,135	2,455,077	18,814,987

$31,000,000. For that year the taxes were 71 percent of the total expenditures. The three previous years they approximated 70, 77, and 75 percent of the total expenditures. Further study indicates that the property tax receipts in former years were from 75 to 80 percent of the total expenditures. Hence data in regard to the taxes levied each year will indicate rather definitely the trend in regard to expenditures for governmental purposes in

Arizona, even though these tax amounts do not represent the total expenditures.

The facts with regard to the taxes collected by each unit of the State from 1913 to 1931 are summarized in Table 3. This is a comparative statement taken directly from the Tenth Report of the State Tax Commission, 1930. It is reprinted here as a number of readers may not have access to the original source.

TABLE 4.— COMPARATIVE INCREASES IN TAXES OF VARIOUS KINDS IN ARIZONA FROM 1913 TO 1932. TAX AMOUNTS OF 1920 USED AS INDEX NUMBER OF 100.

Year	Net valuation	State taxes	County taxes	Special district taxes	City and town taxes	Total taxes for all purposes
1913	43	44	42	17	30	36
1914	43	43	42	21	38	37
1915	46	54	49	24	41	44
1916	55	46	51	26	45	44
1917	79	89	58	36	58	62
1918	94	77	69	39	68	65
1919	97	122	83	63	77	88
1920	100	100	100	100	100	100
1921	94	144	114	77	102	113
1922	88	89	107	72	105	95
1923	79	95	117	96	104	105
1924	73	87	106	98	98	98
1925	72	119	114	117	102	115
1926	74	104	119	124	107	115
1927	76	143	130	123	112	130
1928	77	125	133	160	127	136
1929	79	155	147	129	139	144
1930	81	136	148	130	144	140
1931	76	153	148	106	142	141
1932	51	135	134	76	131	122
Percent increase:						
1913-1931........	77	248	252	523	373	292
1915-1931........	65	183	202	342	246	221
1920-1931........	— 24 [1]	53	48	6	42	41

[1] Decrease.

It will be worth while to have a convenient method of indicating the relative increase of assessed valuation and of the different taxes from year to year. Accordingly, the writer has arranged Table 4 indicating by means of index numbers the tax totals and the valuation for each year. The year 1920 has been taken as the standard and has been given an index number of 100. All things considered it represents a fairly stable basis from which

computations and comparisons may be made. The table should be read thus: " In 1913 the final net valuation was 43 percent of that in 1920; in 1931 it was 76 percent of that in 1920. In 1913 state taxes were 44 percent of those in 1920; in 1931 they were 153 percent of those in 1920." Material for intervening years and in other columns is read in a similar manner.

As an aid to ease in seeing the relative increase in the taxes of various kinds a chart has been drawn. The data of Table 4 have been used. It will be noted from both the table and the chart that state taxes show a decided increase in odd years. This is due to the fact that the legislature meets in odd years and all special appropriations are cared for by a special tax levy for one year.

Careful study of both the table and the chart suggests that the most dependable studies and comparisons are probably for the years 1920 to 1931. In practically all instances the taxes (as well as the assessed valuation) were twice as great in 1920 as in 1915. This condition was due largely to an entirely different standard of values. Statements of increases from 1913 to 1931 and from 1915 to 1931 are included more as a matter of interest than as dependable indices of comparison.

WHAT ARE THE REASONS FOR INCREASES IN EXPENDITURES?

There are several possible reasons why expenditures and the essential taxes have increased in recent years. The first one of these reasons is the increase in population. Arizona, along with Florida and California, is one of the most rapidly growing states of the Union. From 1870 to 1930 the population totals for each decade were as follows:

1870	9,658	1910	204,354
1880	40,440	1920	333,273
1890	88,234	1930	435,833
1900	122,931		

The increase for various periods of time will be of interest. The data follow:

From 1900 to 1930 the population increased 255 percent.
From 1910 to 1930 the population increased 114 percent.
From 1915 to 1930 the population increased 64 percent.
From 1920 to 1930 the population increased 32 percent.

Chart 1. Increases in
Taxes in Arizona
1913-1932.

1. State Taxes
2. County Taxes
3. City and Town Taxes
4. Special District Taxes
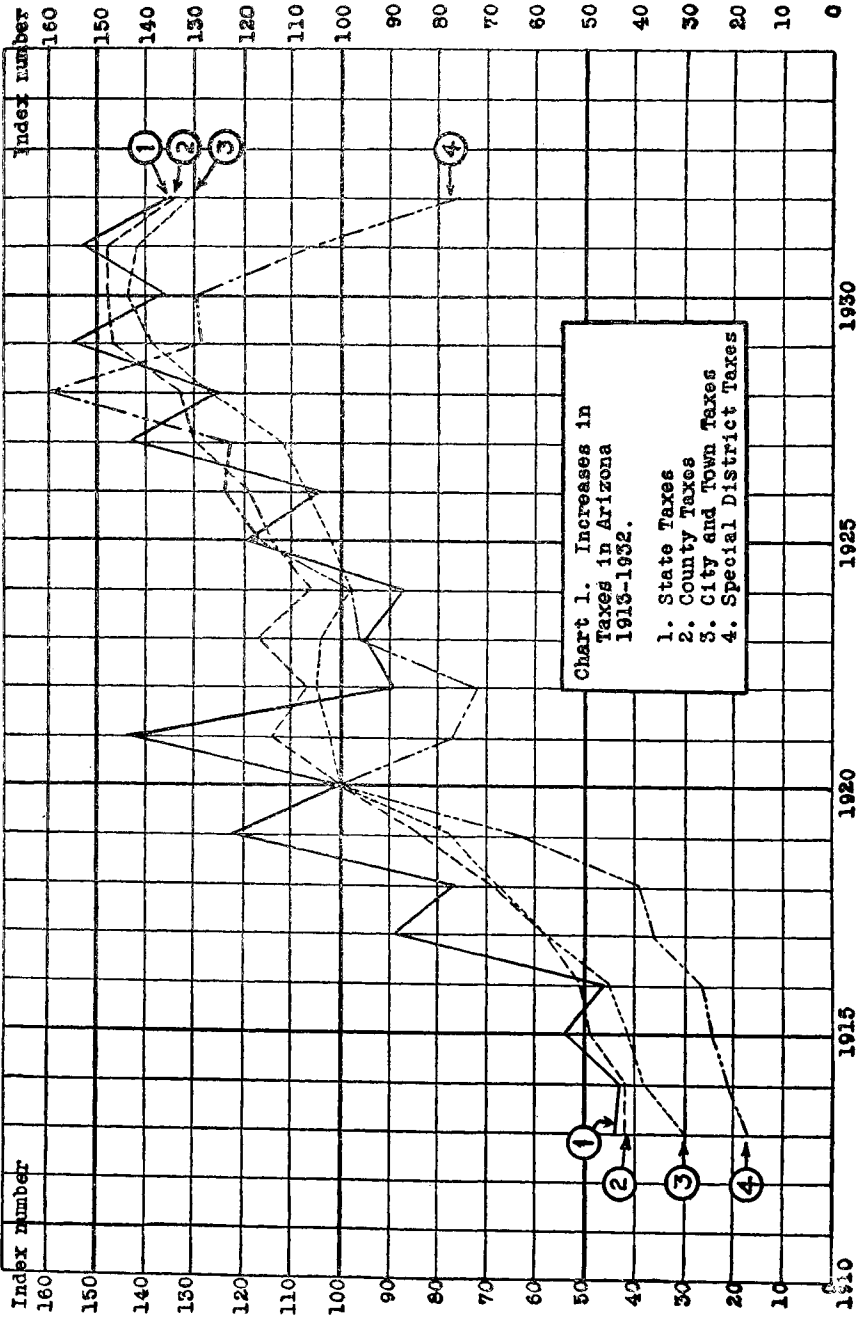
This increase in population has not only increased the current expenses of governmental units but it has also necessitated the construction of new buildings, especially school buildings, the building of roads, and provisions for other services for which a government assumes responsibility.   Unfortunately, a 50-percent increase in population does not always mean merely a 50-percent increase in govermental costs.   It may necessitate only a 10-per-cent increase in expenditure;   quite often, however, it may re-quire an expenditure of 60, 70, or 80 percent more than was orig-inally planned for.   Rarely, if ever, do population growth and increases in public expenditures exactly parallel each other.

A second reason for increase in expenditures and taxes is to be found in the fact that people progressively demand more in the way of services from the government which they support.

" Comprehensive comparisons of different countries and different times show that, among progressive peoples, with which we alone are concerned, an increase regularly takes place in the activity of both the central and the local governments. This increase is both extensive and intensive; the central and local governments con-stantly undertake new functions, while they perform both old and new functions more effectively and completely.   In this way the economic needs of the people, to an increasing extent and in a more satisfactory fashion, are satisfied by the central and local govern-ments.   The clear proof of this is found in the statistics which show the increased needs of central governments and local political units." [1]

If the desires and demands of people require various govern-mental services it is reasonable to suppose that such desires and demands are partially responsible for increased expenditures. Improved roads, new public buildings, and school transportation are some of the services which have been provided because of the wishes of the people.   A decrease in personal and public desires is one of the first steps in the reduction of expenditures.

A third reason for a continuation of large expenditures is to be found in the necessity for meeting obligations assumed in the past.   A firm or a municipality which is growing rapidly may have to care for current needs by borrowing. The interest on the debt and the provision for redemption are an "irreducible minimum" obligation which must be met even though there be a desire to pare expenditures and taxes to the minimum.   The State of Arizona has only a very small bonded debt.   However, counties, cities and towns, school districts, and irrigation and drainage districts have issued bonds in considerable amounts.

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[1] C. J. Bullock, *Readings in Public Finance*, p. 52, Ginn and Company. 1920.

The data showing the total bonded debt of various groups in Arizona together with the annual interest charge from 1922 to 1930 are listed below. These data are from the reports of the State Tax Commission.

Year	Net bonded liability [1]	Annual interest charge	Average interest rate, percent
1922	$39,577,904.20	$2,312,653.34	5.42
1923	39,705,008.85	2,363,005.09	5.56
1924	39,807,764.38	2,387,578.72	5.57
1925	43,246,894.12	2,610,853.43	5.59
1926	43,027,083.43	2,631,470.00	5.60
1927	51,526,853.32	3,162,070.39	5.64
1928	55,021,950.76	3,358,541.84	5.57
1930	57,265,493.03	3,484,977.43	5.57

[1] This represents the bonded debt less the amounts in the redemption fund.
In 1930 the total of outstanding bonds was $63,435,725.29.
The total of the redemption fund was......   6,170,232.26.

The annual interest charge on bond issues is from 15 to 20 percent of the total property taxes collected in the State. For the Nation as a whole expenditures for bond interest and redemption in 1927 were about 25 (24.5) percent of the total expenditures (see p. 6). In some areas the tax necessary to pay interest charges is a much larger proportion of the total. The technique of computing these and other proportionate costs will be outlined later.

As many of the bond issues necessary for capital outlay of various kinds were made some ten years ago, provision for the payment of principal and interest will be a considerable item to plan for in various public budgets of Arizona during the next few years, as payments on the principal are just now coming due.

A fourth reason for increased expenditures is to be found in the decreased purchasing power of the dollar. It is quite evident that $100 worth of tax money would buy less in 1920 or in 1928 than in 1913. In other words, the amounts of taxes have in-creased partially because more money is necessary to purchase the same services — labor, material, and other items — than be-

fore the World War. An index number to indicate the cost of living for a number of years may serve as a measure of the relative value of the dollar at different times. The "cost of living" as used here includes the cost of food, clothing, fuel, light, rent, house furnishings, etc., and is based on accurate and fairly complete data of the United States Department of Labor. The following list of index numbers on the cost of living is taken from *The Monthly Labor Review* of August, 1931 (vol. 33, p. 208). The year 1913 is taken as a base.

1913....100	1918....174	1923....173	1928....170
1914....103	1919....199	1924....173	1929....170
1915....105	1920....200	1925....178	1930....164
1916....118	1921....174	1926....176	1931....150
1917....142	1922....170	1927....172	1932....136

These index numbers indicate that in 1920 it required two dollars to purchase certain items which one dollar did in 1913. In 1930 it required $1.64 to purchase what one dollar did in 1913. This index number does not take into account costs of material but it does give a measure of comparison of tax expenditures as far as the cost of labor is concerned.

Applying this measure to total taxes from 1913 to 1932 we get a very interesting comparison as the total taxes are interpreted in terms of their value on the 1913 basis, which year is given an index number of 100. These data are given in Table 5.

Chart 2 shows the growth in taxes actually raised and the trend in tax totals when transmuted to the basis of 1913 values for the years 1913 to 1932.

The data of this table and chart should not be taken too seriously. They do suggest, however, one factor that should be considered in making a just evaluation of the increase in taxes and expenditures.

Population increase, desire for extension and improvement of governmental services, debts incurred in the past, and the actual value of the dollar should be considered in appraising tax increases and their causes. It is probable that people in general have taken an active part in the second and third factors. Decrease in public services and redemption of past debts will require the whole-hearted cooperation of all.

TABLE 5.— INCREASE IN TAXES IN ARIZONA FROM 1913 TO 1932 EQUATED ON PURCHASING POWER OF THE DOLLAR.

(a) Year	(b) Total taxes	(c) Index number showing tax increases	(d) Index number of cost of living	(e) Index number showing equat- ed increase in taxes (c) ×1/d
1913	$ 5,550,302	100	100	100
1914	5,759,344	104	103	101
1915	6,823,686	123	105	117
1916	6,739,942	121	118	103
1917	9,562,941	172	142	121
1918	9,999,909	180	174	103
1919	13,668,592	246	199	124
1920	15,437,983	278	200	139
1921	17,431,558	314	174	180
1922	14,617,163	263	170	155
1923	16,211,177	292	173	169
1924	15,155,806	273	173	158
1925	17,685,369	319	178	179
1926	17,696,414	320	176	180
1927	20,048,060	361	172	209
1928	20,942,041	377	170	221
1929	22,284,370	401	170	236
1930	21,679,358	391	164	238
1931	21,801,537	393	150	262
1932	18,814,987	339	136 [1]	220

[1] *Monthly Labor Review*, 35: 453, August, 1932.
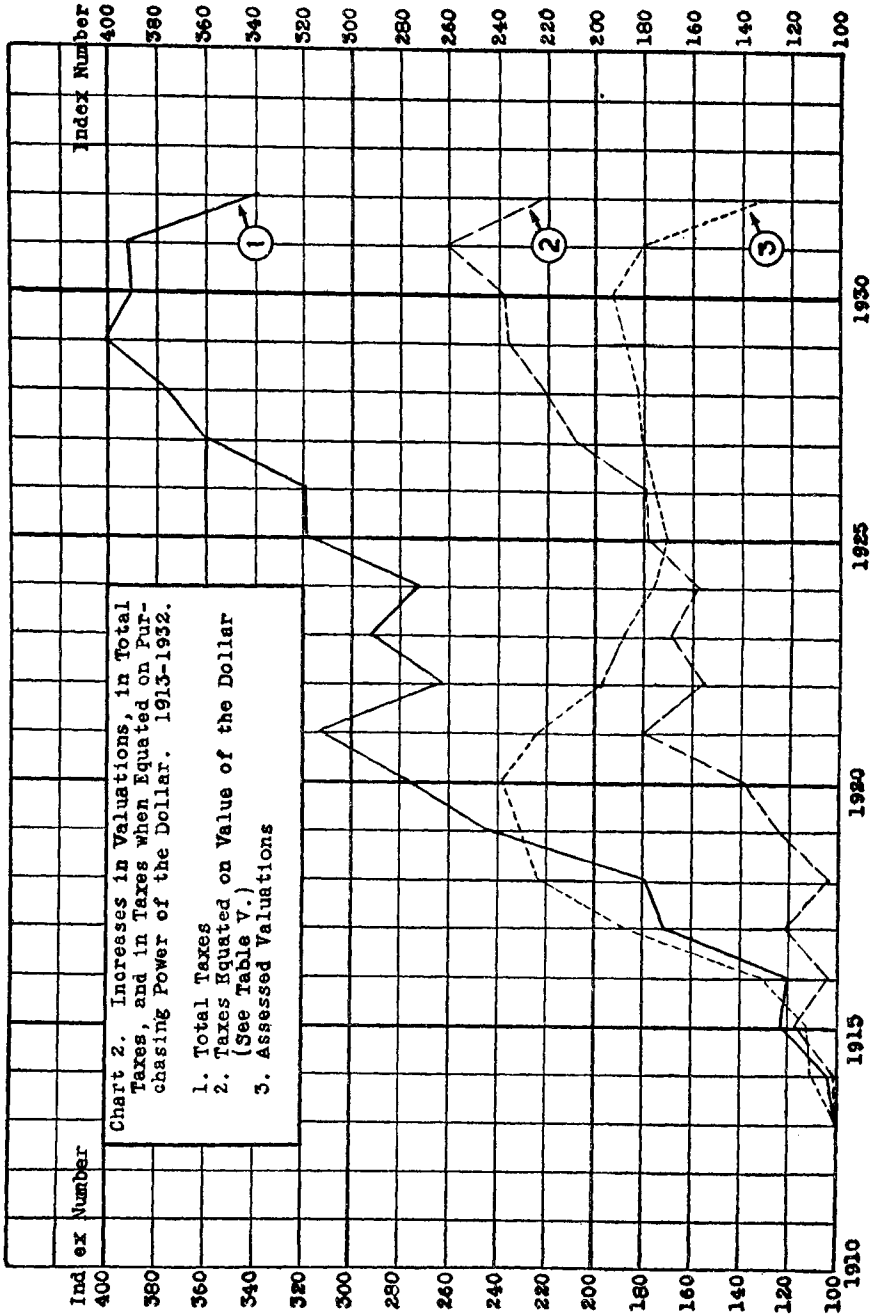
Chart 2. Increases in Valuations, in Total
Taxes, and in Taxes when Equated on Pur-
chasing Power of the Dollar. 1913-1932.

1. Total Taxes
2. Taxes Equated on Value of the Dollar
   (See Table V.)
3. Assessed Valuations

WHAT ARE THE MAJOR ITEMS WHICH ARE RESPONSIBLE FOR GOVERNMENTAL EXPENDITURES IN ARIZONA?

It will be worth while to analyze governmental expenditures and discover what especial activities are responsible for such expenditures as are made. In the case of the Federal Government, for example, it is a noteworthy fact revealed by a study both of the budget and of the annual statement of expenditures that wars and preparations for wars are the largest single item of expense.[1] In the case of expenditures by state and local governments education, highways, public institutions (penal and charitable), and administration are the major items necessitating the expenditure of money from taxes and other sources of revenue.

It will be profitable to note first the expenditures from tax sources as applied to various items. The tax levy made in 1929 serves as the basis for expenditures in 1930. As both the tax levy for 1929 and the analysis of expenditures for 1930 are available they will be used in the illustrative examples which follow. Comparison of these data with those of other years show relatively little variation. Expenditures for roads and bridges have probably increased more within the last five years than have other items due largely to increased revenue from the gasoline tax and also to the aid from the Federal Government, sources of revenue which are listed in Arizona as " non-tax " revenues.

The material in Table 6 indicates the allocation of tax money to various items of governmental expenditures in Arizona. The figures of this table are taken from Table 23 of the Tenth Report of the State Tax Commission. The reader should bear in mind that the administrative units which levy taxes in Arizona are four — state, county, special district, and city or town.

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[1] During the past year the federal tax dollar for the entire United States was expended as follows:

Veterans' administration	24.66	percent
Military	16.57	percent
Debt	24.92	percent

66.15

Public works	10.33	percent
Treasury	4.95	percent
Federal Farm Board	4.55	percent
Postal deficiency	3.44	percent
Agriculture	3.20	percent
Miscellaneous	7.38	percent

TABLE 6.—TAXES LEVIED FOR VARIOUS PURPOSES IN ARIZONA IN 1929.[1]

Purpose for which taxes are levied	State taxes		County and special district taxes		City taxes		Total taxes	
	Amount	%	Amount	%	Amount	%	Amount	%
Education[2]	$3,131,484	48.24	$ 8,009,792	60.90	$ 257,746	9.86	$11,141,276	50.06
Roads and bridges[3]	759,246	11.69	2,201,901	16.74[4]			3,218,893	14.47
Administration	541,323	8.34	1,054,492	8.02	1,584,120	60.60	3,180,035	14.29
Public institut'ns	737,875	11.36	533,817	4.06			1,271,692	5.71
Interest and redemption	125,246	1.93	408,138	3.10	727,231	27.82	1,260,615	5.66
Agriculture and livestock	664,400	10.23	336,472	2.56			1,000,872	4.49
Law, legislative, and judicial	352,990	5.44	528,502	4.02	44,962	1.72	926,454	4.16
Miscellaneous	179,838	2.77	78,812	.60			258,650	1.16
Total	$6,492,402	100.00	$13,152,026	100.00	$2,614,059	100.00	$22,258,487	100.00
Percent of total	28.72		59.08		12.20		100.00	

[1] Data from Table 23 of Tenth Report of State Tax Commission, p. 98.
[2] Includes levy for interest and redemption of school bonds.
[3] Includes levy for interest and redemption of road bonds.
[4] Data from Table 16, p. 86, of Tenth Report of State Tax Commission indicates that 44.8 percent of the county taxes were used for the school fund.

The tax levies for 1930 differ only slightly from those for 1929. Of the taxes levied in 1929 slightly more than half (50.06 percent) were devoted to educational expenditures. In 1930 the percentage of direct property taxes devoted to education was 52.13. In 1931 the percentage was 50.57. It might be well to call attention to a misconception prevalent in some quarters as to the total proportion of the tax levy for which schools are responsible. Occasionally the statement is made that expenditures for education are 60 percent of the total of the taxes levied and collected. Such a statement is based on a misunderstanding of the statement in the original sources. On page 30 of Tenth Tax Commission Report will be found Chart " E-1 " with this heading: " Showing Distribution of Total Tax Levy for State, County, and Special District Purposes, and the Portion of Each Dollar of Tax Money Expended for Each of the Different Governmental Functions for the Year 1929." The chart shows that education is responsible for 56.71 percent of the expenditures. Chart " E-2 " on page 30 showing distribution of tax levy for 1930 indicates that in that year education was responsible for 59.60 percent. In each case attention should be directed to a statement below the chart and tabulation of figures. This statement reads: "City taxes and distribution of same is not included in above chart and tabulation but may be found on Table 23." In other words, in 1929 the tax levy for education was 56.71 percent of 87.80 percent (100.00 minus 12.20) of the total tax levy or approximately 50 percent (49.79). This varies a little from the figure given in Table 6 as Chart " E-1 " is based on figures slightly different from those in the table. It is very important that *all available data be used and that statements be carefully read and interpreted if one wishes to secure a clear picture of the financial situation.*

It should again be stated that a mere statement of tax levies for a specific item of government does not indicate the total expenditures for that item. On page 13 there are given figures showing the State revenues from tax and non-tax sources. On succeeding pages the same possibility with respect to counties and cities is elaborated. The factor of sources of revenue must be applied to various items or purposes of expenditures if dependable ideas of cost are to be secured as a basis for the formulation of policy and the determination of action.

Schools and roads are the major items of local expenditures within the various states. Data concerning expenditures from property taxes and other sources for several years may indicate

the desirability of considering total expenditures for an item rather than merely the tax levy. The available data for schools and roads for the years 1929 to 1930 follow:

For the year 1929:

(A) School expenditures.... $13,474,920.77
    [1] Taxes (1928 levy).....$10,157,200.00 (75.24%)
    Non-tax revenue....... 3,317,720.77
(B) Roads and bridges.....   7,604,464.11
    [1] Taxes (1928 levy)..... 3,394,382.00 (44.69%)
    [2] Non-tax state revenue.. 3,371,075.26
    [3] County portion ⅜ of 4-
       cent gasoline tax, July
       1, 1928 to June 30,
       1929............... 840,107.85

For the year 1930:

(A) School expenditures.... $14,148,630.88
    [4] Taxes (1929 levy).....$11,141,276.00 (78.74%)
    Non-tax revenue....... 3,007,354.88
(B) Roads and bridges..... $9,064,665.78
    [4] Taxes (1929 levy)..... 3,218,893.00 (35.63%)
    [5] Non-tax state revenue.. 4,845,772.78
    County portion of gaso-
       line tax (July 1, 1929
       to June 30, 1930)..... 1,000,000.00 ?

For the year 1931 there are only incomplete data. For the state contribution to the items of schools and roads they are as follows:

(A) Sctool expenditures (state)...... $4,119,452.19
    Non-tax money..................$ 663,314.54
    Tax money..................... 1,062,376.00
    Tax money..................... 3,455,137.65
    Percent of taxes levied by state..   48.65
    Percentage of total expenditures
       by state.....................   28.67
(B) Roads and bridges (state)........ $7,234,289.02
    Non-tax money..................$6,207,913.00
    Tax money 1,062,376.00
    Percent of taxes levied by state..   14.45
    Percentage of total expenditures
       by state.....................   50.34

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[1] Ninth Report of State Tax Commission, p. 102.
[2] Eighteenth Report of State Auditor, p. 94.
[3] Arizona Year Book, 1931, p. 122.
[4] Tenth Report of State Tax Commission, p. 102.
[5] Nineteenth Report of State Auditor, p. 104.

These data indicate that the property tax totals are 80 percent or less of the total expenditures of all governmental units and also that roads and bridges draw a proportionately larger share of their support from non-tax sources than do schools.

As indicative of the way the State of Arizona expends its money Tables 7 and 8 are included giving a summary of expenditures by the State for the fiscal year ended June 30, 1930, and for the fiscal year ended June 30, 1931. The totals only are given except in the case of "Educational" expenditures which are outlined in detail.

A comparison of the data of the two tables indicates quite clearly that the greatest increase in expenditures in 1931 by the State as a unit was for roads and bridges. This increase was in money from both tax and non-tax sources. The data for the fiscal year which ended June 30, 1932, are not yet available. Those people who are interested in making comparisons of the increase or decrease in either total expenditures or those for single items would do well to compare the auditor's reports for previous years.

The total expenditures for schools from 1911 to 1932 are shown in Table 9. As fully as can be determined the figures of this table represent all expenditures in any way connected with public education within the State. The data of columns 2 to 12 inclusive are taken from the reports of the State Superintendent of Public Instruction. From 1921 to 1931 the figures represent county treasurers' reports and consequently all educational expenditures within the counties are included. The data of column 13 (Other Educational Expenditures) are from reports of the State Auditor. The figures of this column (column 13) were secured by taking the total educational expenditures of the State and subtracting therefrom state expenditures for common schools. Expenditures for the University, the two Teachers' Colleges, county scholarships, and the State Superintendent's office are included here, no matter what the source of revenue is. Some of the revenue necessary for the maintenance of the University is from federal funds as is some for highways and other state items but the attempt has been made to determine total expenditures and to report them as such. Column 5 (Miscellaneous) represents expenditures for accommodation schools, manual training and home economics, expenses of the county superintendents' offices, interest on warrants, and other contingencies. Effort has been made to avoid duplication in the reporting of educational expenditures. The sources of data are indicated so that the interested reader may check them for himself.

TABLE 7.—EXPENDITURES FROM THE GENERAL AND VARIOUS FUNDS OF THE STATE OF ARIZONA SHOWING NET TAX MONEY AND NON-TAX MONEY EXPENDED FOR VARIOUS PURPOSES, TOGETHER WITH THE PERCENTAGES DEVOTED TO EACH. DATA FOR FISCAL YEAR WHICH ENDED JUNE 30, 1930.

Purpose	1 Net expenditures	2 Percent of net total expended	3 Non-tax	4 Net tax money expended	5 Percent of tax money expended
FROM GENERAL FUNDS:					
1. Legislative, law, and judicial	$ 141,905.43	1.18	$ 141,905.43		2.25
2. Health, penal, and charitable	882,699.41	7.33	33,509.16	$ 849,190.25	3.44
3. Military	101,587.56	.84		101,587.56	1.61
4. Educational:					
Common schools	2,092,766.64	17.37	298,363.19	1,794,403.45	28.40
County scholarships	10,173.19			10,173.19	
Historian	6,168.52			6,168.52	
Historical Society of Prescott	884.70			884.70	
Northern Arizona Teachers' College	260,918.58	2.16	4,770.48	256,148.10	4.05
Pioneers' Historical Society	3,200.00			3,200.10	
School of Military Science and Tactics	5,449.27		5,449.27		
School of Mines	6,570.00		6,570.00		
Tempe State Teachers' College	258,789.28	2.15	4,765.43	254,023.85	4.02
University of Arizona	1,297,747.49	10.77	348,238.46	949,509.03	15.03
Vocational education	67,965.15			67,965.15	
Total	$ 4,010,632.82	33.29	$ 668,156.83	$3,342,475.99	52.90
5. Administration	499,106.50	4.14		499,106.50	7.90
6. Agriculture	451,777.22	3.75	51,310.77	400,466.85	6.34
7. Public works	249,212.47	2.07		249,212.47	3.94
8. Miscellaneous	380,706.50	3.16	25,656.12	355,050.38	5.62
9. Accounts payable	17,699.73	.15		17,699.73	.28
Total net expenditures from General Fund	$ 6,735,327.69	55.91	$ 778,632.48	$5,956,695.21	94.28
FROM VARIOUS FUNDS:					
1. Game and fish protection	104,870.78	.87	104,870.78		
2. Interest territory and state funded debt	79,296.63	.66		79,296.63	1.26
3. State highway fund	5,127,658.17	42.56	4,845,772.78	281,985.39	4.46
Total expenditures	$12,047,253.27	100.00	$5,729,276.04	$6,317,977.23	100.00
Percent of total		52.44	47.56	52.44	

TABLE 8.—EXPENDITURES FROM THE GENERAL AND VARIOUS FUNDS OF THE STATE OF ARIZONA SHOWING NET TAX MONEY AND NON-TAX MONEY EXPENDED FOR VARIOUS PURPOSES, TOGETHER WITH THE PERCENTAGES DEVOTED TO EACH. DATA FOR FISCAL YEAR WHICH ENDED JUNE 30, 1931.

Purpose	1 Net expenditures	2 Percent of net total expended	3 Non-tax	4 Net tax money expended	5 Percent of tax money expended
FROM GENERAL FUND:					
1. Law, legislative, and judicial	$ 312,111.59	2.17		$ 312,111.59	4.39
2. Health, penal, and charitable	813,536.89	5.66	$ 41,859.45	771,677.44	10.86
3. Military	103,054.11	.72		103,054.11	1.45
4. Educational:					
Common schools	2,214,098.63	15.41	300,338.01	1,913,760.62	26.95
County scholarships	10,750.00			10,750.00	
Historian	6,198.89			6,198.89	
Historical Society of Prescott	1,000.00			1,000.00	
Northern Arizona Teachers' College	323,076.26	2.25	10,153.46	312,922.80	4.41
Pioneers' Historical Society	3,194.50			3,194.50	
School of Military Science and Tactics	3,807.07		3,807.07		
School of Mines	6,460.00		6,460.00		
Tempe Teachers' College	328,896.24	2.28	4,353.41	324,542.83	4.57
University of Arizona	1,153,970.60	8.03	339,202.59	814,768.01	11.48
Vocational Education	68,000.00			68,000.00	
Total	$ 4,119,452.19	28.67	$ 664,314.54	$3,455,137.65	48.65
5. Administration	592,395.73	4.12		592,395.73	8.34
6. Agriculture	475,262.41	3.31	56,336.09	418,926.32	5.90
7. Public works	176,472.46	1.23	719.24	175,753.22	2.48
8. Miscellaneous	308,015.81	2.14	153,259.04	154,756.77	2.18
9. Accounts payable	21,431.85	.15		21,431.85	.03
Total net expenditures from General Fund	$ 6,921,733.04	48.17	$ 916,488.36	$6,005,244.68	84.55
FROM VARIOUS FUNDS:					
1. Game and fish protection	143,372.77	1.00	143,372.77		
2. Interest territory and state funded debt	70,971.58	.49		70,971.58	1.00
3. State highway fund	7,234,289.02	50.34	6,207,913.00	1,026,376.02	14.45
Total expenditures	$14,370,366.41	100.00	$7,267,774.13	$7,102,592.28	100.00
Percent of total			50.57	49.43	

The data of columns 2 to 12 of Table 9 are from Reports of State Superintendent of Public Instruction as follows:

1912-1913 First   Report, p. 23.
1913-1914 Second   Biennial Report, p. 69.
1914-1915 Third   Biennial Report, p. 71.
1915-1916 Third   Biennial Report, p. 71.
1916-1917 Fourth   Biennial Report, p. 80.
1917-1918 Fourth   Biennial Report, p. 80.
1918-1919 Fifth   Biennial Report, p. 44.
1919-1920 Fifth   Biennial Report, p. 44.
1920-1921 Sixth Biennial Report (Financial and Statistical Report), pp. 6-7.
1921-1922 Sixth Biennial Report (Financial and Statistical Report), p. 43.
1922-1923 Seventh Biennial Report, p. 75.
1923-1924 Seventh Biennial Report, p. 147.
1924-1925 Eighth   Biennial Report, p. 99.
1925-1926 Eighth   Biennial Report, p. 157.
1926-1927 Ninth   Biennial Report, p. 103.
1927-1928 Ninth   Biennial Report, p. 177.
1928-1929 Tenth   Biennial Report, p. 98.
1929-1930 Tenth   Biennial Report, p. 171.
1930-1931 Data from office of State Superintendent.
1931-1932

The data of column 13 are from Reports of State Auditor as follows:

1912-1913 First   Annual Report, pp. XI- XII.
1913-1914 Fourth   Annual Report, pp. XVI-XVII.
1914-1915 Fourth   Annual Report, pp. XVI-XVII.
1915-1916 Sixth   Annual Report, pp. 16-19.
1916-1917 Sixth   Annual Report, pp. 16-19.
1917-1918 Eighth   Annual Report, pp. 40-42.
1918-1919 Eighth   Annual Report, pp. 40-42.
1919-1920 Ninth   Annual Report, pp. 39-42.
1920-1921 Tenth   Annual Report, pp. 42-43.
1921-1922 Eleventh Annual Report, pp. 42-55.
1922-1923 Twelfth   Annual Report, pp. 58-59—Insert.
1923-1924 Thirteenth   Annual Report, p. 55—Insert.
1924-1925 Fourteenth   Annual Report, p. 75—Insert.
1925-1926 Fifteenth   Annual Report, p. 81—Insert.
1926-1927 Sixteenth   Annual Report, p. 85—Insert.
1927-1928 Seventeenth   Annual Report, p. 105—Insert.
1928-1929 Eighteenth   Annual Report, p. 94—Insert.
1929-1930 Nineteenth   Annual Report, p. 105—Insert.
1930-1931 Data from State Auditor.

It has previously been mentioned that when buildings are constructed with borrowed money and when this borrowed money is later repaid that the funds listed under " bond redemption " are not a new expenditure. Bond interest is an expenditure necessitated by previous borrowing but it is not a repayment of money which has already been listed as an expenditure. The " total expenditures for common schools " as listed in column 12 of Table 9 represent an overstatement of school costs because expenditures for buildings and sites are counted twice — once in the *building fund expenditures* and again in *bond redemption*.

TABLE 9.—TOTAL EXPENDITURES FOR EDUCATION IN ARIZONA, 1913-1932.

| (1) Year | Maintenance | | | Miscellaneous | Buildings and Improvements | | | Debt service | | | (12) Total expenditures, common schools | (13) Other educational expenditures | (14) Total expenditures for education |
	(2) Elementary	(3) High school	(4) Total	(5)	(6) Elementary	(7) High school	(8) Total	(9) Bond interest	(10) Bond redemption	(11) Total			
1911-1912 [1]			$ 890,533.27	$ 223,407.72 [2]			$ 266,937.48				$1,321,594.83	$ 193,913.91	$ 1,515,508.74
1913-1914			1,212,116.37	433,005.31			490,427.15				2,135,548.83	384,508.64	2,520,057.47
1914-1915			1,509,633.46	465,373.44			599,477.00				2,574,483.90	611,788.19	3,186,272.09
1915-1916			1,515,575.72	682,469.79			469,031.17				2,667,076.68	626,046.28	3,293,122.96
1916-1917			1,686,157.28	757,584.53			425,488.57				2,869,230.38	763,206.39	3,632,436.77
1917-1918			2,017,474.41	936,194.60			725,087.62				3,678,756.63	651,623.78	4,330,380.41
1918-1919			2,314,573.42	1,263,851.43			358,204.67				3,936,529.51	831,933.68	4,768,463.19
1919-1920			3,146,108.62	1,690,490.81			1,502,689.00				6,339,288.43	872,043.68	7,211,332.11
1920-1921 [2]	$4,423,063.75	$1,153,811.44	5,576,875.19	171,543.62 [2]			2,164,058.72			$ 547,857.77	8,460,335.30	1,088,559.42	9,548,894.72
1921-1922	3,789,349.15	1,211,050.88	5,000,400.03	224,399.85	$681,478.08	$651,192.27	1,332,670.35	$535,405.13	$ 161,719.56	679,124.69	7,394,114.88	1,262,958.73	8,657,073.61
1922-1923	4,004,717.91	1,463,697.32	5,468,415.23	299,688.48	459,683.40	644,356.46	1,104,039.86	423,789.59	362,402.45	786,192.04	7,658,295.33	1,171,016.36	8,829,311.69
1923-1924	4,282,499.50	1,646,716.75	5,929,216.25	486,614.32	718,904.35	581,161.06	1,300,065.41	469,737.45	338,216.60	807,954.05	8,523,850.03	1,216,016.15	9,739,866.18
1924-1925	4,422,981.02	1,608,805.56	6,031,786.58	273,959.80	562,662.25	537,127.60	1,099,789.85	657,450.09	253,480.36	910,930.45	8,316,466.58	1,445,788.68	9,762,255.26
1925-1926	4,746,479.81	1,666,818.58	6,413,298.39	370,369.66	611,020.90	467,802.38	1,078,823.28	649,285.76	431,360.28	1,080,646.04	8,943,137.37	1,784,685.74	10,727,823.11
1926-1927	4,930,554.64	1,744,133.06	6,674,687.70	620,133.00	668,508.28	99,174.60	767,682.88	684,499.21	428,203.32	1,112,702.53	9,175,206.11	1,444,984.22	10,620,190.33
1927-1928	5,327,752.05	1,886,210.48	7,213,962.53	301,147.28	522,301.41	330,545.67	852,847.08	722,963.94	1,185,550.47	1,908,514.41	10,276,471.30	1,589,101.12	11,865,472.42
1928-1929	5,461,866.60	2,210,065.70	7,671,932.30	244,794.40	599,049.42	999,169.95	1,598,219.37	751,557.48	1,607,887.49	2,359,444.97	11,874,391.04	1,600,529.73	11,865,572.42
1929-1930	6,456,053.29	2,707,264.48	9,163,317.77	255,890.32	791,337.57	343,484.57	1,134,822.14	765,927.28	910,777.19	1,676,734.47	12,230,764.70	1,917,866.18	14,148,630.88
1930-1931	6,320,533.18	2,569,931.51	8,890,464.69	141,524.63	977,101.81	101,573.72	1,078,775.53	793,038.55	1,025,892.56	1,818,931.11	11,932,595.96	1,905,353.56	13,837,959.52
1931-1932	5,612,384.93	2,406,504.79	8,018,889.72	155,724.71	67,178.04	167,015.73	234,193.77	794,993.23	1,029,030.42	1,824,023.65	10,232,831.85	1,885,441.45	12,118,273.30

[1] Data for 1912-1913 lacking.
[2] From 1912 to 1920 "Miscellaneous" included high school maintenance, bond interest, and bond redemption.

TABLE 10.—EXPENDITURES FOR COMMON SCHOOLS AND FOR ALL EDUCATIONAL PURPOSES IN ARIZONA FROM 1913 TO 1932 CORRECTED FOR BOND INTEREST AND BOND REDEMPTION.

1	2	3	4	5
Year	Expenditures for common schools with bond redemption omitted	Expenditures for common schools with bond redemption and bond interest omitted	Total educational expenditures with bond redemption omitted	Total educational expenditures with bond redemption and bond interest omitted
1911–1912		$ 1,321,594.33 [1]		
1913–1914		2,135,548.83		
1914–1915		2,574,483.90		
1915–1916		2,667,076.68		
1916–1917		2,869,230.38		
1917–1918		3,678,756.63		
1918–1919		3,936,529.51		
1919–1920		6,339,288.43		
1920–1921	$ 7,850,000.00 [2]	7,913,477.53		$ 9,000,991.95
1921–1922	7,232,395.32	6,696,990.19	$ 8,495,354.05	7,959,948.92
1922–1923	7,295,892.88	6,872,103.29	8,466,909.24	8,044,119.65
1923–1924	8,185,633.43	7,715,895.98	9,401,649.58	8,931,912.13
1924–1925	8,062,986.22	7,405,536.13	9,508,775.00	8,851,324.81
1925–1926	8,511,777.09	7,862,491.33	10,296,472.83	9,647,177.07
1926–1927	8,747,002.79	8,062,503.58	10,191,987.01	9,507,487.80
1927–1928	9,090,920.83	8,267,956.89	10,680,021.95	9,957,058.01
1928–1929	10,265,503.55	9,514,946.07	11,867,033.28	11,115,475.80
1929–1930	11,319,987.51	10,554,060.23	13,237,853.69	12,471,926.41
1930–1931	10,906,703.40	10,113,664.85	12,812,066.96	12,019,028.41
1931–1932	9,203,801.43	8,408,808.20	11,089,242.88	10,294,249.65

[1] Data concerning bond redemption and bond interest not segregated before 1921–1922. Figures from 1911–1912 to 1920–1921 represent total expenditures with no omissions.

[2] Estimated.

Data from same sources as Table 9.

Some would insist that bond interest should not be counted, as it is not a new expenditure in the narrow sense of the term but merely a disbursement growing out of the policy of deferred payments for past expenditures.

The writer believes that bond redemption should be omitted from statements of total school costs as the money thus disbursed has already been listed as an expenditure. Bond interest has not been counted as an expenditure and should be included as a new expenditure even though the policy or decision which requires provision for this money was determined in previous years and sometimes by entirely different groups of people. Eliminating bond redemption from the total costs gives a more accurate picture of the true situation than does the elimination of expenditures for buildings. This latter item sometimes includes money from insurance, salvage of buildings, sale of land, and revenue from other similar sources, and the expenditure should be listed, whatever the source of the funds.

Because of the difference of opinion the writer has prepared a table showing: (a) the total expenditures for elementary and secondary schools with bond redemption expenditures omitted; (b) the total expenditures for elementary and secondary schools with expenditures for bond redemption and bond interest omitted; (c) the total expenditures for all schools with expenditures for bond redemption omitted; (d) the total expenditures for all schools with expenditures for bond redemption and bond interest omitted. The writer believes that (a) and (c) represent defensible statements of the actual expenditures without omission of any items or duplication of amounts once recorded.

It is quite obvious from a consideration of the data of Tables 9 and 10 that expenditures for educational purposes have increased during the last twenty years. It may be worth while to analyze these expenditures and note the reasons for such increases as exist.

WHAT ARE THE REASONS FOR INCREASED EXPENDITURES FOR SCHOOLS?

As has previously been indicated the population of Arizona has shown a decided increase during the past twenty years. Such increase has affected school expenditures in two ways. The first has been in the requirement of new buildings with the attendant

costs; the second has been in the increase of school registration, especially in high school. Each of these factors will be analyzed in turn.

Buildings become necessary when a new community is just being settled or when a community already established is receiving a large influx of people. Seasonal crops and the coming and going of winter visitors place a heavy burden on particular school districts. The establishment of high schools has necessitated the construction of buildings. Building expense must all be borne by the district involved and the problem of securing revenue for this purpose is often an acute one. As evidence of the fact that the problem has existed for some time it might be worth while to note that in 1920-1921 the percentages of the total expenditures for schools which were charged against buildings and sites were as follows:[1]

In Arizona elementary schools.....................20.0 percent
In Arizona secondary schools......................45.3 percent
Both elementary and secondary schools in Arizona...27.0 percent
Both elementary and secondary schools in United
　　　States...15.5 percent

It is quite evident that there are some disadvantages in being in a state which is growing rapidly and which also attracts a population for a small portion of the school year.

Attention has previously been directed (pp. 24-25) to the fact that bond redemption and bond interest really represent a second statement of expenditures which were first made on the basis of borrowed money. In 1920-1921 the amount of bonds outstanding was $5,723,460 for elementary and $2,975,750 for secondary schools — a total of $8,699,210. In 1929-1930 the amount of bonds outstanding was $8,887,050 for elementary and $4,957,300 for high schools — a total of $13,844,350. The amount in the sinking funds in 1930 was approximately two million dollars ($1,976,181.06).[2] The proportions of the total school expenditures for common schools which should be charged to buildings and to debt service each year are indicated in Table 11.

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[1] Sixth Biennial Report of Superintendent of Public Instruction, 1922, p. 8.

[1] Sixth Biennial Report of State Superintendent of Public Instruction, 1922, p. 9.

[2] Tenth Biennial Report of State Superintendent of Public Instruction, 1930, p. 209.

TABLE 11.— PERCENTAGE OF TOTAL COMMON SCHOOL EXPEND-
ITURES IN ARIZONA DEVOTED TO BUILDINGS AND
IMPROVEMENTS, BOND INTEREST, AND BOND REDEMPTION.

1	2	3	4	5	6
Year	Percent buildings and improvements are of total expenditures	Percent bond interest is of total expenditures	Percent bond redemption is of total expenditures	Percent bond interest and bond redemption are of total expenditures (3) + (4)	Percent bond interest, bond redemption, and building costs are of total expenditures (2) + (5)
1911-1912 [1]	20.19				
1913-1914	22.97				
1914-1915	23.33				
1915-1916	17.57				
1916-1917	14.83				
1917-1918	19.70				
1918-1919	9.11				
1919-1920	23.70				
1920-1921	25.58			6.48	32.06
1921-1922	18.03	7.25	1.94	9.19	27.22
1922-1923	14.41	5.52	4.73	10.25	24.66
1923-1924	15.26	5.51	3.97	9.48	24.74
1924-1925	13.25	7.92	3.05	10.97	24.22
1925-1926	12.07	7.26	4.82	12.08	24.15
1926-1927	8.34	7.46	4.65	12.11	20.45
1927-1928	8.28	7.02	11.70	18.72	27.00
1928-1929	13.43	6.32	13.51	19.83	33.26
1929-1930	9.30	6.28	7.47	13.75	23.05
1930-1931	9.06	6.66	8.62	15.34	24.40
1931-1932	2.29	7.77	10.06	17.83	20.12
Average 1911-1930	16.07 [2]				
1920-1930	13.80				
1921-1930	12.37	6.72	6.20	12.92	28.98

[1] Data not segregated, 1911-1912 to 1919-1920.
[2] 1921-1930.
This table should be read thus: " In 1911-1912 the expenditures for
buildings and improvements were 20.19 percent of the total expenditures
for common schools.   In 1921-1922 the expenditures for buildings were
18.03 percent of total school expenditures; expenditures for bond inter-
est were 7.25 percent, for bond redemption 1.94 percent, bond interest
and redemption combined 9.19 percent, and expenditures for buildings,
bond interest and bond redemption 27.22 percent of the total expendi-
tures for schools."

The data of this table show clearly that expenditures for buildings have decreased during the last five years. At the same time it has been necessary to increase the amounts devoted to bond redemption as obligations assumed in the past are now coming due. One other outstanding fact is that for ten years a fourth (28.98 percent) of the school expenditures have gone for present or past building construction. Approximately one-eighth (12.92 percent) of the total annual expenditures is for bond interest and bond redemption. These obligations must be met. Moves for economy can be provided not on the total school expenditures but on the 80 to 87 percent which represents costs other than debt service. This last statement assumes that no new building programs are being undertaken. Suggestions with regard to reduction of expenditures must recognize the fact that a reduction of 15 percent in the total school budget must of necessity mean a 20-percent reduction in maintenance costs, the expenditures for debt service being practically fixed by circumstances. (For example 25 percent of the expenditures of a certain school are devoted to bond interest and bond redemption and are definitely determined. A reduction of 15 percent of the total budget is based on the 75 percent devoted to current expenditures. Their reduction is 20 percent of the total devoted to current expense.) If such reduction is planned great care must be exercised to make certain that the work of the school is not seriously interfered with — an almost impossible task in some instances.

The second reason for increase of expenditures is increase in school attendance. The school population in Arizona has increased much more rapidly than has the population in general. The high school enrollment has increased more rapidly than has the enrollment in elementary schools. In the table which follows the average daily attendance in the common schools of Arizona from 1910 to 1932 is indicated. No allowance is made here for the fact that the length of term has been increased during that time nor for the fact that the length of term in high schools may be from 5 to 15 days longer than the length of term in elementary schools. Consequently, the figures on increase in attendance tend to understate the situation in regard to actual growth.

The item of the relatively greater cost of high school education has been considered in the last column of Table 12.

The writer has taken the total expenditures for elementary schools during the ten-year period from 1920 to 1930 and divided

them by the average daily attendance during these same years. The same procedure was followed in determining high school costs. The average annual cost per pupil in high schools was found to be 2½ (2.58) times that per pupil in elementary schools. To get a true picture of the expected increase in school costs we should consider attendance in elementary schools plus 2½ times the attendance in high schools. This constitutes the " weighted attendance " total as outlined in the last column of Table 12.

TABLE 12.—AVERAGE ATTENDANCE IN ELEMENTARY SCHOOLS, IN HIGH SCHOOLS, IN ELEMENTARY AND HIGH SCHOOLS COMBINED, AND WEIGHTED ATTENDANCE IN ELEMENTARY AND HIGH SCHOOLS FROM 1910 TO 1932.

Year	Elementary school attendance [1]	High school attendance [1]	Combined elementary and high school attendance	Weighted attendance (Elementary school attendance plus 2½ times high school attendance)
1910-1911	20,689	1,087	21,776	23,407
1911-1912	21,612	1,201	22,813	24,615
1912-1913	23,457	1,547	25,004	27,325
1913-1914	28,140	1,773	29,913	32,573
1914-1915	29,583	1,972	31,555	34,513
1915-1916	31,813	2,444	34,257	37,923
1916-1917	36,788	2,868	39,656	43,958
1917-1918	38,229	3,293	41,522	46,462
1918-1919	38,139	3,220	41,359	46,189
1919-1920	41,983	4,437	46,420	53,076
1920-1921	44,648	5,210	49,858	57,673
1921-1922	43,646	6,336	49,982	59,486
1922-1923	45,735	7,282	53,017	63,940
1923-1924	46,172	7,492	53,664	64,902
1924-1925	49,372	7,974	57,346	69,307
1925-1926	51,268	8,723	59,991	73,076
1926-1927	56,371	8,885	65,256	78,584
1927-1928	59,473	10,172	69,645	84,903
1928-1929	60,902	11,214	72,116	88,937
1929-1930	64,323	12,126	76,449	94,638
1930-1931	63,957	14,199	78,156	99,454
1931-1932	65,922	15,720	83,072	105,222

[1] Data from Tenth Biennial Report of State Superintendent, 1930, p. 216. Data for kindergartens are not included.

The data of Table 12 might be more readily interpreted if index numbers were used instead of figures. A table has been prepared giving an index number of 100 to the data for 1921. The

financial data with respect to maintenance, building costs, and debt service as outlined in Table 10 are quite complete from that year and comparisons can readily be made. Table 13 which follows gives the index number for elementary school attendance, high school attendance, combined elementary and high school attendance, weighted attendance, and costs of common schools (bond redemptions omitted).
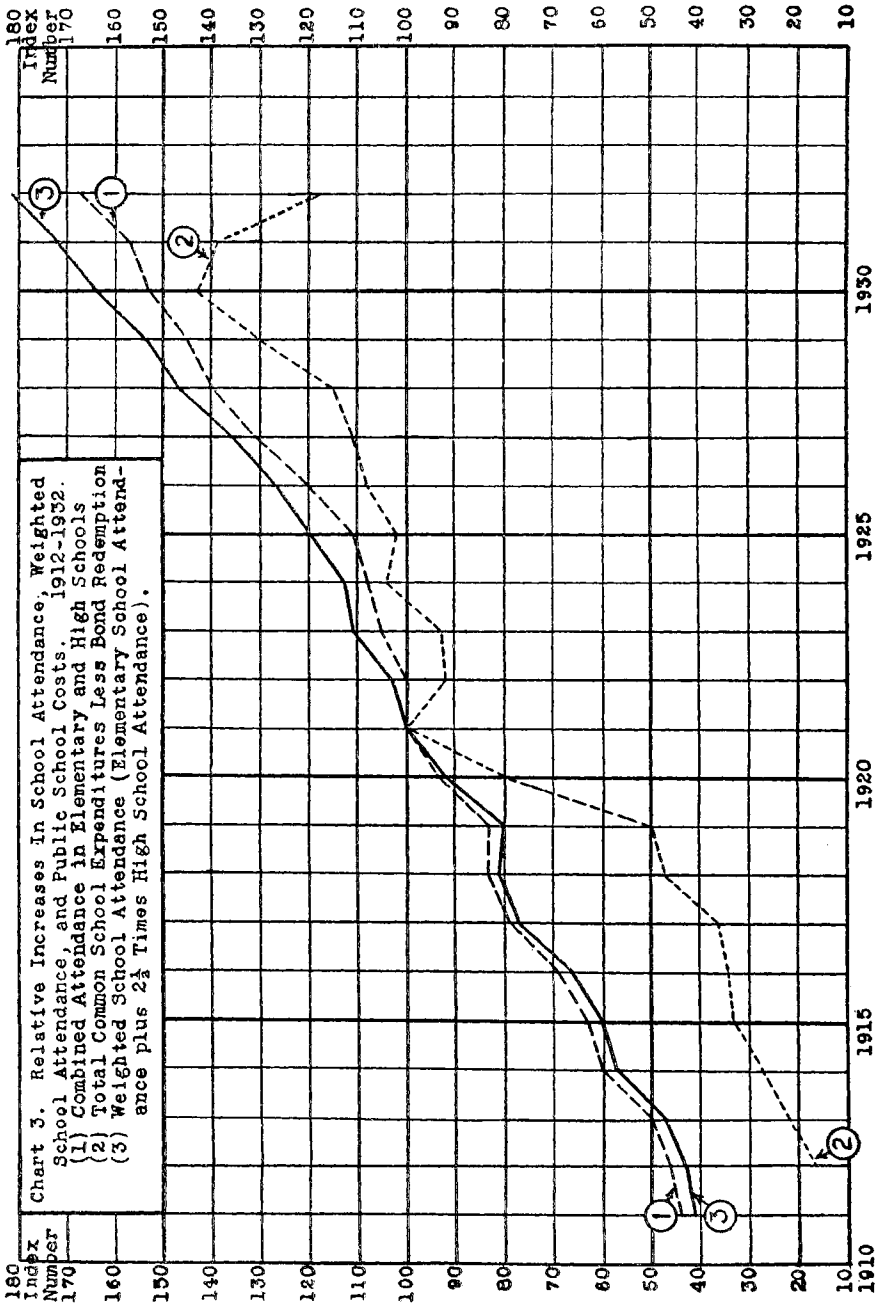
TABLE 13.— INDEX NUMBERS SHOWING INCREASES IN ATTEND-
ANCE IN ELEMENTARY AND SECONDARY SCHOOLS OF
ARIZONA, INCREASES IN WEIGHTED ATTENDANCE,
AND INCREASES IN TOTAL COSTS FOR
COMMON SCHOOLS LESS BOND REDEMPTION.[1]

1 Year	2 Elementary school attendance	3 High school attendance	4 Combined elementary and high school attendance	5 Weighted attendance (Elementary school attendance plus 2½ times high school attendance)	6 Total expenditures for common schools
1910-1911	46	21	44	41	—
1911-1912	48	23	46	43	16
1912-1913	53	30	50	47	—
1913-1914	63	34	60	57	27
1914-1915	66	38	63	60—	33
1915-1916	71	47	69	66	34
1916-1917	82	55	79	77	36
1917-1918	86	63	83	81	47
1918-1919	85	62	83	80	50
1919-1920	94	85	93	92	80
1920-1921	100	100	100	100	100
1921-1922	98	121	100	103	92
1922-1923	102	140	105	111	93
1923-1924	103	144	108	113	104
1924-1925	111	153	111	120	102
1925-1926	115	167	120	127	108
1926-1927	126	171	131	136	111
1927-1928	133	195	140	147	115
1928-1929	136	215	145	154	130
1929-1930	144	233	153	164	143
1930-1931	144	272	157	172	139
1931-1932	148	302	167	182	117

[1] Data of columns 2, 3, 4, and 5 from Table 12. Data of column 6 from columns 2 and 3 of Table 10.

It will be noted from this table that the growth in attendance from 1920-1921 to the present has been a little more rapid than has the increase in expenditures. There were large expenditures for buildings in 1919-1920 and 1920-1921 as may be noted from column (8) of Table 9 and from columns (2) and (6) of Table 11. With the plan of bonding in general use in Arizona we can expect the expenditures for bond redemption to be quite an item for the next ten or fifteen years. In passing it should be mentioned that previous to 1920 school expenditures increased more rapidly than did attendance but this was the period of establishment of schools.

The pertinent data of Table 13 may be more easily interpreted if put in the form of a chart. Accordingly, a chart has been prepared which shows for ready comparison the combined attendance of elementary and secondary pupils, weighted attendance, and corrected expenditures for common schools (total expenditures less bond redemption).

Chart 3. Relative Increases in School Attendance, Weighted
School Attendance, and Public School Costs, 1912-1932.
    (1) Combined Attendance in Elementary and High Schools
    (2) Total Common School Expenditures Less Bond Redemption
    (3) Weighted School Attendance (Elementary School Attend-
        ance plus 2½ Times High School Attendance).

II.   THE SOURCES OF REVENUE

HOW DOES THE FEDERAL GOVERNMENT SECURE REVENUE FOR CARRYING ON ITS WORK?

During the last fiscal year the government of the United States spent approximately five billion dollars. This money was raised by means of various taxes. Among these taxes are excise taxes on tobacco, duties, sales taxes, stamps, and taxes on incomes. Excise taxes on tobacco and on drugs and taxes on incomes brought into the treasury of the United States $2,428,228,754 in the fiscal year which ended June 30, 1931, and $1,554,233,363 in the fiscal year which ended June 30, 1932. Income tax collections constitute one of the major sources of revenue for the Federal Government.

DOES ARIZONA CONTRIBUTE TOWARD THE NECESSARY REVENUE OF THE FEDERAL GOVERNMENT?

It is of course difficult to determine how much any community or state contributes in the form of indirect taxes. Tariff duties are paid by the ultimate consumer. So also are certain types of excise taxes although they may be credited to the sources where they were originally collected. Incidentally, a tax of which the consumer is ignorant is paid without protest or resentment. Income taxes and excess profits taxes together with licenses for the sale of narcotics can readily be checked. It will be worth while to note the amounts of income and miscellaneous taxes collected in Arizona from 1914 to 1932. The data are from the annual reports of the Commissioner of Internal Revenue, published by the Department of Treasury.

It is evident from this table that Arizona makes quite definite contributions to the Federal Government in the form of both income and miscellaneous taxes. It is also noticeable that there has been quite a decided decrase in the total collected during the past year — a definite evidence of decrease of income produced within the State.

IS THERE ANY RETURN TO ARIZONA OF REVENUE FROM THE FEDERAL GOVERNMENT?

The Federal Government spends considerable money within the State of Arizona. Postal service, forest service expenditures, veterans' hospitals at Prescott and Tucson, and the costs of In-

TABLE 14.— INCOME AND MISCELLANEOUS TAXES COLLECTED BY THE FEDERAL GOVERNMENT IN ARIZONA FROM 1914 TO 1932.[1]

Year	Income tax from corporations	Income tax from individuals	Total income tax collection	Miscellaneous	Total
1914	$ 87,579.31	$ 28,672.14	$ 116,250.45		$ 116,250.45
1915	74,935.76	26,488.11	101,423.87		101,423.87
1916	182,694.64	50,607.07	233,301.71	$ 118,317.18	441,618.89
1917	637,993.92	200,330.75	838,324.67	77,588.49	915,913.16
1918 [2]			6,179,671.74	545,685.44	6,725,317.18
1919			4,962,995.54	743,939.03	5,706,934.57
1920			2,685,349.24	912,166.06	3,597,515.30
1921			2,784,941.73	1,412,721.69	4,202,663.42
1922			1,427,375.40	713,859.52	2,141,234.92
1923			1,164,518.32	501,557.55	1,666,075.87
1924	810,252.05	606,542.38	1,591,667.27	539,561.28	2,131,228.85
1925	965,470.92	608,439.82	1,416,794.43	290,718.73	1,707,513.16
1926	1,043,751.92	629,439.58	1,573,910.74	408,869.72	1,982,780.46
1927	1,032,727.51	704,661.80	1,673,191.50	63,920.08	1,737,111.58
1928			1,737,389.31	182,772.36	1,920,161.87
1929	1,004,426.03	1,306,178.67	2,310,604.70	88,273.66	2,398,878.36
1930	1,468,207.52	1,358,730.05	2,826,937.57	138,772.44	2,965,710.01
1931	1,114,554.29	1,079,935.07	2,194,489.36	68,130.16	2,262,619.52
1932					927,331.00 [3]

[1] Fiscal year July 1–June 30.
[2] Data not segregated for years 1918 to 1924, inclusive.
[3] Incomplete.

dian schools and reservations are some of the most evident examples of such use of Federal money within the State on the part of the National Government. A study which has been made indicates that some $16,000,000 is spent in Arizona by the National Government.[1] Hospitals and veterans' compensation are two large items of such expenditure. The amount which is granted to the State by the Federal Government and spent under the direction of the State is also of interest. The detailed data for the fiscal year 1931-1932 are as follows:

FEDERAL APPROPRIATIONS, STATE OF ARIZONA, FOR YEAR
WHICH ENDED JUNE 30, 1932.[1]

Animal husbandry		$ 21,900.00
Colorado River and other stream gauging..........		20,500.00
Child hygiene:		
Federal appropriation....	$14,566.66	
Rockefeller Foundation..	4,375.00	
		18,941.66
Date palm scale eradication...		10,000.00
Eradication of injurious rodents		11,795.00
Predatory animals...........		15,000.00
Vocational education:		
Rehabilitation...........	11,000.00	
Vocational agriculture:		
(Smith-Hughes)	15,926.18	
(George Reed).......	2,423.94	
Trades and industries and home economics:		
(Smith-Hughes)......	10,000.00	
(George Reed).......	3,965.20	
Teacher training........	10,000.00	
		53,315.32
University of Arizona:		
Experiment Station:		
Adams	15,000.00	
Hatch	15,000.00	
Purnell	60,000.00	
Agricultural Extension:		
Additional cooperation	11,000.00	
Capper-Ketcham ...	22,044.02	
Smith-Lever	40,121.17	
Morrill-Nelson	50,000.00	
		213,765.19
Total of above federal allotments.		$ 346,275.51
Allotments for road construction not available.		
Federal allotments for road construction, fiscal year ended June 30, 1931................		3,559,701.51 $3,905,977.02

[1] *Arizona Republic,* June 8, 1932, pp. 1 and 4.
[2] Amounts taken from appropriation bill from State Treasurer's office and from Auditor's office.

HOW DO THE STATE AND THE LOCAL GOVERNMENTAL UNITS OF ARIZONA SECURE THE REVENUE NECESSARY FOR THEIR WORK?

The major portion of the revenue necessary for the operation of government in the state, the county, the city, and the special district comes from direct property taxes Revenue is also secured from so-called " non-tax " sources. These sources include the gasoline tax, licenses, poll taxes, tuition fees at various state schools, grants or subventions from the Federal Government, inspection fees, and other miscellaneous sources. While these sources are not classified as taxes it should be borne in mind that all means, either direct or indirect, by which any unit of government secures revenue from the citizens thereof is a tax. The term " tax " should not be limited merely to revenue secured by a direct tax on real or personal property.

WHAT PROPORTION OF THE TOTAL EXPENDITURES COMES FROM DIRECT PROPERTY TAXES?

It has previously been shown (p. 12) that the total property taxes in 1930 were slightly in excess of 22 millions of dollars; in 1931 the total of taxes was slightly less.   In 1930 the total expenditures within the State, as based on available revenue, exceeded 31 millions of dollars.   Taxes were thus 71 percent of total expenditures.   Data for the various governmental units show that for 1930 the percentages of total expenditures were as follows:

	Tax sources	"Non-tax"
State	52.44	47.56
County (estimated)	80	20
City (estimated)	75-80	25-20
Special districts	100	

Since expenditures for education are from 80 to 85 percent tax money, an error is introduced when the tax costs of schools are compared with the tax costs of other items, half of the support of which may come from other sources although the public furnishes the support in either case.

TABLE 15.— PROPERTY VALUATIONS, BY GENERAL CLASSIFICATIONS — 1910-1932.

Year	Railroads	Mining property	Land and improvements	Town and city lots and improvements	Livestock	All other property	Total taxable property
1910	$ 13,224,292	$ 19,714,592	$12,624,759	$ 24,957,628	$ 7,480,050	$ 8,124,903	$ 86,126,226
1911	19,052,313	19,242,331	14,139,689	26,476,175	7,780,544	11,341,654	98,032,708
1912	28,512,434	45,145,084	18,173,333	25,871,075	9,330,578	13,305,684	140,338,191
1913	84,130,910	140,488,648	41,334,907	57,579,873	22,377,364	29,950,710	375,862,414
1914	90,204,403	146,672,395	46,238,468	63,950,566	24,882,803	35,318,755	407,267,393
1915	91,041,472	159,109,288	45,636,845	63,486,078	27,520,692	33,738,033	420,532,411
1916	91,982,622	216,879,796	45,426,194	67,712,804	27,910,542	36,494,559	486,406,518
1917	96,728,523	393,421,536	53,165,013	72,207,861	37,782,508	44,221,177	697,526,619
1918	98,541,403	491,719,960	66,551,622	77,050,732	44,041,763	56,115,050	834,020,532
1919	100,391,008	496,262,860	74,949,901	80,597,114	42,200,045	60,823,790	855,224,720
1920	100,985,637	469,651,131	103,252,333	92,901,192	41,808,486	75,856,901	884,455,682
1921	101,199,300	424,365,559	94,115,622	98,093,043	33,197,102	87,130,696	830,536,582
1922	100,427,627	358,635,358	86,323,456	93,641,972	27,552,587	76,485,126	732,021,286
1923	100,547,255	323,891,322	83,948,999	91,277,229	27,543,398	72,429,487	697,002,006
1924	101,247,770	275,125,273	84,187,724	91,919,398	24,274,419	76,094,691	649,879,308
1925	101,937,386	267,582,204	85,611,485	93,011,798	18,530,150	74,222,832	640,895,855
1926	103,150,785	277,805,484	85,333,942	93,914,033	16,072,577	76,886,576	653,163,397
1927	109,830,047	288,235,403	80,364,052	101,002,813	16,328,897	77,365,965	673,127,177
1928	109,795,338	284,288,893	82,631,399	108,297,472	15,283,195	81,439,721	681,736,018
1929	109,956,764	290,454,366	83,497,925	117,007,625	13,369,852	86,604,269	700,890,801
1930	110,811,480	284,237,996	85,129,400	125,352,618	12,688,507	96,725,808	714,945,809
1931	110,261,198	249,502,605	84,316,793	128,927,834	10,442,644	96,675,514	674,729,235
1932	92,969,726	127,194,211	66,387,726	100,307,697	10,110,460	80,773,406	473,342,415

WHAT ARE THE TRENDS IN TOTAL VALUATION AND IN THE VALUATION OF VARIOUS TYPES OF PROPERTY IN ARIZONA?

The valuation of each of the major types of property — railroads, mining property, land and improvements, town and city lots and improvements, livestock, and other property — from 1900 to the present is shown in various tables of the reports of the State Tax Commission. As not all people may have convenient access to this source of information these valuations from 1910 to the present year are listed in the accompanying table. It will be noted that with most property the high valuations were from 1918 to 1922.

A more effective way of indicating trends in valuations is to use index numbers, the valuations for 1920 being assigned the index number 100. These index numbers are shown in Table 16.

TABLE 16.— RELATIVE INCREASES IN PROPERTY VALUATIONS OF ARIZONA BY CLASSIFICATION FROM 1910 TO 1932. VALUATION OF 1920 ASSIGNED INDEX NUMBER OF 100.[1]

| Year	1 Railroads	2 Mines	3 Land	4 City and town lots	5 Livestock	Other property	Total
1911	19	4	14	29	15	15	11
1912	28	10	17	28	22	18	16
1913	84	30	40	62	53	39	42
1914	90	31	46	67	59	46	46
1915	91	34	45	67	66	45	47
1916	92	46	45	73	66	48	55
1917	96	84	52	77	90	58	79
1918	98	105	66	83	105	74	94
1919	99	106	75	87	100	80	97
1920	100	100	100	100	100	100	100
1921	100	90	93	106	80	115	94
1922	100	76	85	101	66	101	83
1923	100	69	82	98	66	95	79
1924	101	59	83	99	55	100	74
1925	101	57	84	100	44	98	72
1926	102	59	84	101	38	101	74
1927	108	61	79	108	38	102	76
1928	108	61	81	115	36	107	77
1929	108	62	82	127	32	114	79
1930	110	61	84	134	30	127	81
1931	109	52	82	138	25	129	76
1932	93	26	64	108	24	108	54

[1] Data of Table 15.
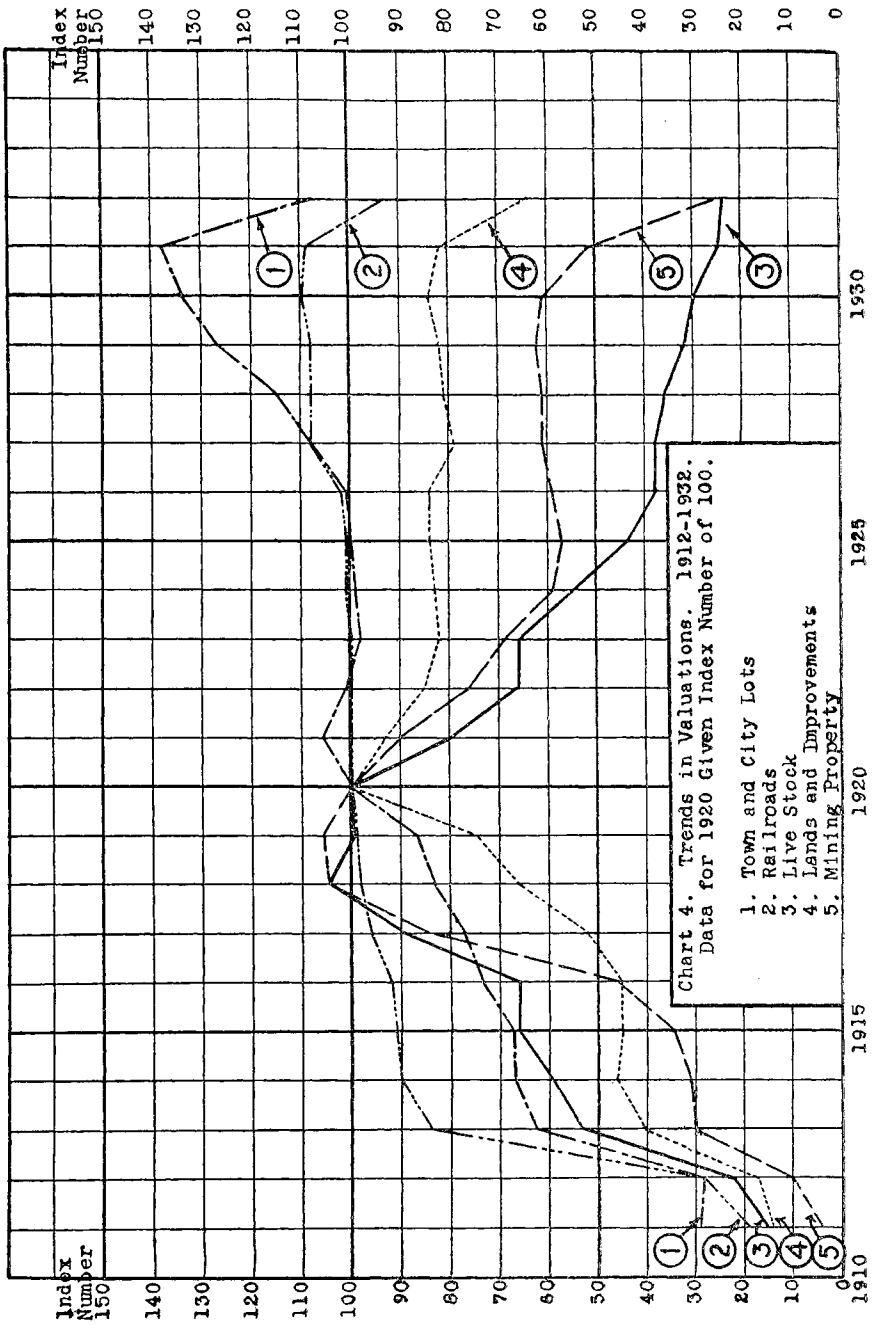
Chart 4.   Trends in Valuations. 1912-1932.
Data for 1920 Given Index Number of 100.

1. Town and City Lots
2. Railroads
3. Live Stock
4. Lands and Improvements
5. Mining Property

The data for columns 2 to 5 of Table 16 are also shown in Chart 4.

A study of Tables 15 and 16 and Chart 4 makes quite evident the fact that during the last 10 years there have been consistent decreases in the valuations of mines, land, livestock, and in total valuations. There have been increases in the valuations of city lots and other property and slight increases (until 1932) in the value of railroad property. The most serious fact is that total valuations of property within the State have decreased a fourth (24 percent) from 1920 to 1931 and almost half by 1932.

WHAT IS THE EFFECT OF THESE TRENDS IN PROPERTY VALUATIONS ON THE TAX RATE?

It is fairly obvious that a decrease in property valuations will necessitate a higher tax rate to produce the same revenue. A decrease of 25 percent in assessed values will require an increase of 33⅓ percent in the tax rate to insure the same revenue. For example a tax of $3.00 per hundred on a piece of property assessed at $1,000 will secure the same returns as a tax of $4.00 per hundred on the same property when the valuation has been reduced to $750. This has happened in Arizona with a definite increase in the tax rate.

It should also be remembered that since 1920 the population has increased 32 percent, the school attendance has increased 53 percent, various governmental services have been added, and services previously provided have been improved or intensified. An increased tax rate does not in itself imply extravagance or dishonesty.

In a later section there will be detailed statements concerning solutions. Two suggestions might be made here. The first is that each district or governmental unit might properly analyze its own tax rate and note what factors are responsible for such increases as do exist. The second is that other sources of revenue than direct property taxes merit conscientious study and careful consideration.

WHAT PROPORTION OF THE TOTAL VALUATION OF THE STATE IS EACH TYPE OF PROPERTY?

The biennial reports of the State Tax Commission indicate for each year from 1900 to the present the proportion of the total State valuation which is to be credited to each type of property.

Chart 5. Proportion of Valuation in Each
Classification of Property. 1910-1932.

1. Mining Property
2. Town and City Lots
3. Railroads
4. Land and Improvements
5. All other Property
6. Live Stock
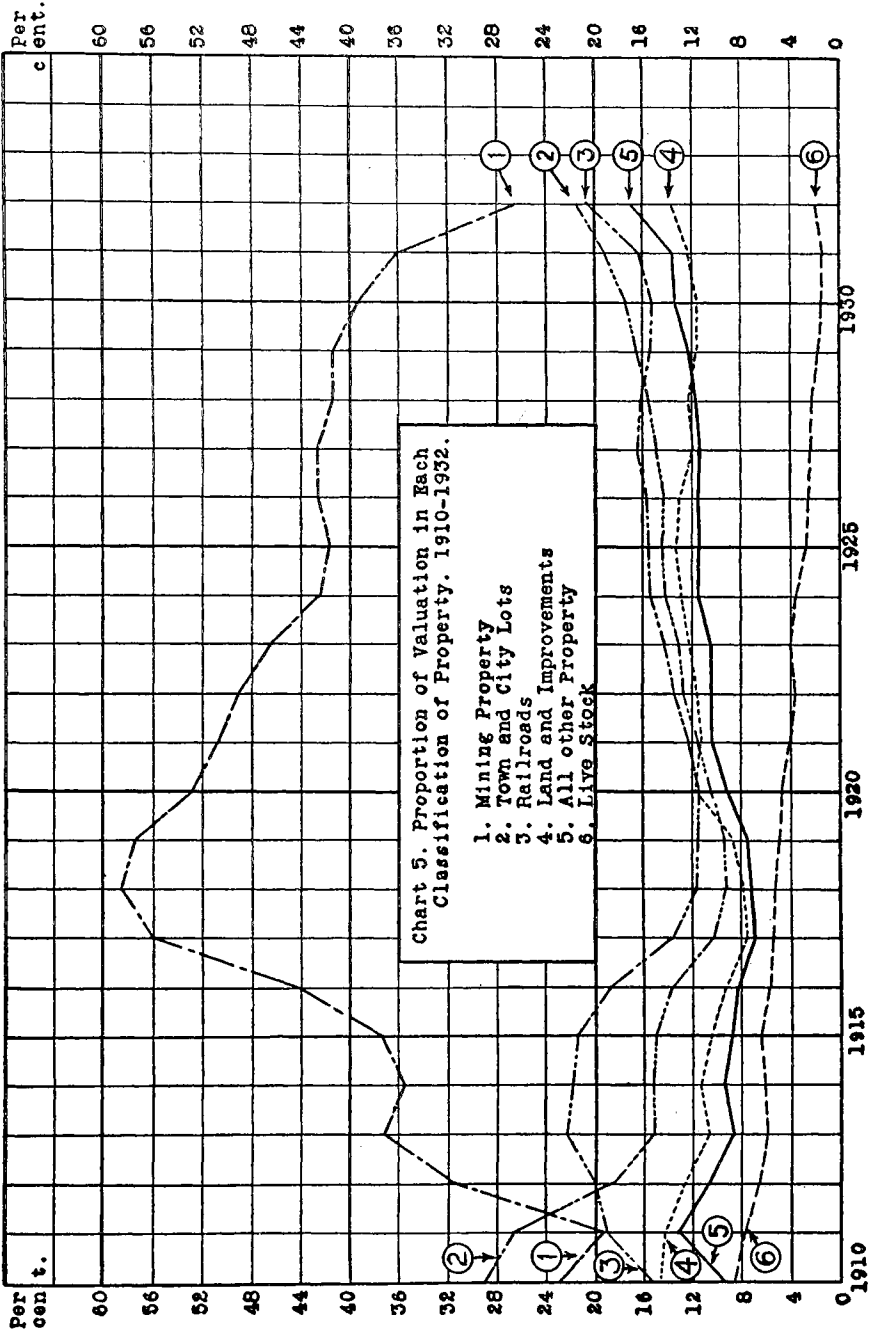
The writer has not taken the space to copy these data in tabular form. Instead, a chart (Chart 5) has been arranged which shows definitely the percentage of the total assessed valuation of the State which is to be credited to each major type of property each year. It will be noted that mining property is the largest single item. Livestock represents approximately 1½ percent of the total. Bear in mind that the total valuations in any one year amount to 100 percent.

The assessed valuations of property in Arizona will be found to be less than valuations as listed in Federal census reports. This holds for various classifications of property. In 1930 " Land and Improvements" was listed by the State of Arizona as having an assessed valuation of 85 millions of dollars. The Federal census reports of 1930 list farms and buildings as having a value of 184 millions. The wealth of Arizona has been listed by various groups as approximately 1500 million dollars ($1,568,000,000)[1] while the assessed wealth as listed by the State authorities here is 700 millions. The difference of estimates is mentioned here so that any one wishing to make comparisons with other states may use the same basis of judgment.

It should be indicated that Arizona has within its borders much land and other property which will never produce any revenue for the State. The pertinent data with respect to land are as follows:[2]

	Acres	Percent
Area of State (113,956 square miles)	73,931,840	
National forest reserve	11,467,370	15.52
Indian reservations	18,221,546	24.66
National monuments	673,090	.91
Military reservations	76,200	.01
Public domain	14,839,008	20.08
Total area under Federal control	45,277,214	61.18
State land	6,474,134	8.76
Land owned by schools, churches, and municipalities	1,866,500	2.52
Grand total under public control	53,617,848	72.46

Much of this public land may eventually be settled. A considerable portion will not be opened to settlement nor should it be if the best interests of present and future generations are to be

[1] National Industrial Conference Board Bulletin, February 25, 1930.
[2] Data compiled from Arizona Year Book, 1931.

promoted. Arizonans should, however, not assume that the whole area of the State will ever produce revenue for the maintenance of the various governmental units within the State.

WHAT IS THE EXTENT OF INCOME IN ARIZONA AND FROM WHAT SOURCES IS THIS INCOME DERIVED?

Revenues for both personal and public expenditures must come primarily from income. Property valuations are important as bases for taxation only insofar as they give an idea of the income to be expected. In the study of school finance in New York [1] it was found that the income in various counties varied from 2.2 to 23.6 percent of the wealth. The suggestion is there made that in comparing the ability of different counties to support schools the basis be $\dfrac{1/10 \text{ actual wealth} + \text{income}}{2}$. Income should be carefully considered in judging ability to pay taxes.

The writer has attempted to secure accurate estimates of the income of Arizona. The two sources of information are the Arizona Industrial Congress and the National Bureau of Economic Research. Data collected by the latter group are available only for 1928. In that year they estimated the income in Arizona as 277 million dollars ($277,198,900). In 1928 the Arizona Industrial Congress gives the value of production of Arizona industries as 224 millions. This last figure does not consider secondary sources of income — salaries and wages of railway employees, the salaries and incomes of professional workers, returns from winter visitors, and other similar items which are difficult to compute accurately. *If we add one-third to the value of production of industries we will probably secure a defensible estimate of the income of the State.*

The value of the production of Arizona industries for the last five years is as follows: [2]

1927..........$190,000,000	1930..........$154,000,000
1928.......... 224,000,000	1931.......... 89,000,000 [3]
1929.......... 254,000,000	

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[1] *Financing Education in New York,* The MacMillan Company, 1923. A study made by Educational Finance Inquiry Commission, pp. 166-176.
[2] Arizona Business Review, February, 1931; January, 1931; December, 1930; January, 1930; December, 1929.
[3] Memorandum, Arizona Industrial Congress.

These are data compiled by the Arizona Industrial Congress. A detailed analysis of the returns from the major industries may be of both interest and value. They are outlined below.

	1927	1928	1929	1930	1931
Crops....	$ 42,000,000	$ 49,326,000	$ 50,544,000	$ 36,938,000	$16,516,000
Cattle....	?	24,429,000	13,735,000	10,400,000	
					9,000,000
Sheep....	?	6,000,000	4,604,000	2,575,000	
Lumbering	?	?	4,250,000	2,750,000	2,000,000
Manuf'ct'g	?	?	40,000,000	25,000,000	25,000,000
Copper...	?	105,447,860	146,190,690	70,000,000	
Gold.....	?	3,967,468	4,182,237	3,514,000	
Silver....	-	3,972,940	4,020,370	2,040,000	
Lead.....	?	834,096	1,011,410	468,000	
Zinc......	?	79,997	162,236	73,000	
Total mineral products.	$ 98,000,000	$116,000,000	$156,000,000	$ 76,095,000	$36,529,235
Total.....	$190,000,000	$224,000,000	$254,000,000	$154,000,000	$89,000,000

Other items of importance have been omitted from the tabulation above. Of the field crops referred to above the major products with their values in 1929 were:

Cotton.............$15,286,440 (Seed $2,220,000 not included).

Tame hay.........	12,222,000	Wheat	$1,530,900
Lettuce	7,748,000	Corn	1,492,000
Cantaloupes	2,530,000	Grain sorghum.....	1,482,000

Citrus fruits, barley, and potatoes are other important crops which have not been included in this brief summary. Acreage and volume of production are indicated in the Arizona Business Review for December, 1930. Lack of space prevents their inclusion here.

With the available data on income and taxes it is probably correct to state that from 1927 to 1930 taxes were from 7 to 11 percent of the income in Arizona and that taxes for schools ranged from 2½ to 4 percent of the total income of the State.

HOW CAN ONE DETERMINE THE TOTAL TAX RATE AND THE TAX RATE FOR EDUCATION IN ANY COMMUNITY?

In determining the total tax rate and the tax rate for education it is necessary to have access to the following data:

1. The state tax rate
2. The percentage of the state tax rate devoted to education
3. The county tax rate
4. The percentage (or specific rate) devoted to education

5. The city or town tax
6. The special district tax — both elementary and high school
   a. For maintenance
   b. For bond interest
   c. For bond redemption.

Two examples will be given to illustrate the essential technique involved.

The first example is that of a rural school district in Maricopa County with taxes computed on the 1930 levy. The rate is for each $100 of assessed valuation:

1. State tax rate........ .... $0.80
2. State tax rate for school purposes (54.32%).....$0.4345
3. Maricopa County tax rate....................   1.81
4. Maricopa County tax rate for schools........... .9597
5. City tax (outside city limits)..................   0.00
6. High school tax (Phoenix Union High School).. .54
7. Elementary school tax........................ 1.15   1.15
   a. Maintenance... . ...$0.591
   b. Building fund....................... .10
   c. Bond interest....................... .194
   d. Bond redemption.................... .265

8. Total tax rate........................ $4.30
9. Percent total tax rate ($3.0842)
   is of total tax......................   71.7
10. Percent school maintenance tax
   ($2.5252) is of total tax..............   60.1

$$(2 + 4 + 6 + 7,a)$$

(Federal taxes and indirect taxes not considered in this and succeeding problem.)

Expenditures for past and present buildings contribute to an increase in the tax rate.

The second example is from a city school district of Gila County with taxes computed on the 1931 levy.

1. State tax rate.............................. $0.95
2. State tax for school purposes...............$0.4816
3. Gila County tax rate.......................   1.11
4. Gila County tax rate for schools............ .5795
5. City tax...................................   3.31
6. High school tax........................... .0011   .0011

7. Elementary school tax...................... .3574   .3574
   a. Maintenance...... ....$0.2189
   b. Bond interest.................... .0887
   c. Bond redemption................ .0498

8. Total tax rate...................... $5.7285
9. Percent total school tax ($1.4296)
   is of total tax....................   24.95
10. Percent school maintenance tax
   ($1.2911) is of total tax...........   22.54
$$(2 + 4 + 6 + 7,a)$$

Other examples might reaily be given but the same general procedure of computation applies to all situations. Each school administrator should note the total tax rate, the proportion devoted to school maintenance and to debt service, and use these to evaluate present school support and suggestions for retrenchment. In many cases the expenditures for schools and proposals for securing revenue will prove more reasonable than was at first apparent. Professional educators and laymen should all analyze the components of the tax rate as a basis for proper action.

III. APPORTIONMENT OR ALLOCATION OF REVENUES

HOW DO TAXES AND TOTAL EXPENDITURES COMPARE?

It has been stated at various times in our discussion that tax totals and expenditure totals do not coincide. That statement is again repeated for emphasis. In 1930 taxes represented approximately 71 percent of the expenditures by the State and its subsidiary units. To secure a statement of expenditures the writer would suggest the following basis of estimates:

(a) State expenditures = state taxes plus 80 to 100 percent additional (pp. 12-14).

(b) County expenditures = county taxes plus 20 percent additional (pp. 13-15). State school money not counted as it duplicates state record of expenditure.

(c) City expenditures = city taxes plus 25 percent additional (p. 15)

(d) Special district expenditures = net district taxes

These estimates probably err in the direction of understating total expenditures to the extent of 3 to 6 percent. This is a reasonably dependable basis of estimate, however, until complete statements of expenditures by all governmental units within the State are made available.

FOR WHAT PROPORTION OF THE TOTAL TAXES IS EACH UNIT OF GOVERNMENT RESPONSIBLE?

The biennial reports of the State Tax Commission indicate definitely the percentage of the total taxes which each unit of government is responsible for. During the years from 1921 to 1930 the percentages were as follows:

Year	State	County	Special districts	Cities and Towns
1921	34.78	54.10	Included in county	11.12
1922	25.24	60.86	Included in county	13.60
1923	24.69	63.25	Included in county	12.06
1924	24.01	63.75	Included in county	12.24
1925	28.27	39.13	21.69	10.91
1926	24.73	40.85	23.07	11.35
1927	29.88	39.34	20.19	10.59
1928	25.07	38.43	25.07	11.43
1929	29.25	40.02	19.00	11.73
1930	26.38	41.37	19.74	12.51
1931	29.68	41.82	16.10	12.40
1932	30.85	43.45	13.36	12.34
Average	27.45	40.14 [1]	20.69 [1]	11.84

[1] Seven years (1925 to 1931, inclusive).

The reader should bear in mind that these figures represent the condition for the State as a whole and hence do not apply to a specific county. For example, in 1930 the county levy ranged from 33.56 percent of the total taxes in Cochise County to 73.86 percent of the total in Apache County. On the other hand, special district taxes were 2.69 percent of the total in Apache County and 24.43 percent of the total in Maricopa County (see Table 26, Tenth Report of State Tax Commission, 1930). The state tax is some 25 percent of the total taxes collected. A reduction of 20 percent in State expenditures of tax money would bring about a decrease of only 5 percent in the total taxes of the State. Economy, then, becomes a task not merely for one unit of government but for all if appreciable results are to be secured.

These tax proportions do not tell the whole story in regard to expenditures. The basis of estimating total expenditures as outlined on page 60 makes allowance for expenditures from non-tax sources. If desired, percentages of tax totals as given above may be used to determine the proportion of the total expenditures to be directly charged against each unit of government. As applied to 1930 the general procedure would be as follows:

(1) State percentage of taxes....26.38 Add 100 percent of this figure and the corrected total is.........52.76

(2) County percentage is........41.37 Add 20 percent of this figure and the corrected total is........49.64

(3) City percentage is...........12.51 Add 25 percent of this figure and the corrected total is.........15.64

(4) Special district percentage...19.74 Net amount used

(5) Sum of corrected totals is..137.78 (A new base instead of 100)

(6) State expenditures $= 52.76 \div 137.78 = 38.29$ percent of total

(7) County expenditures $= 49.54 \div 137.78 = 36.03$ percent of total

(8) City expenditures $= 15.64 \div 137.78 = 11.35$ percent of total

(9) Special district expenditures $= 19.74 \div 137.78 = 14.33$ percent of total

Data from other sources tend to indicate that this plan of estimating proportionate expenditures gives a very close approximation to the true situation.

If the data of the preceding paragraph were employed it immediately becomes apparent that a reduction of 20 percent in expenditures by the State implies a saving of almost 8 percent in the total expenditures within the State. (There is no implication that the State either could or should attempt to save 20 percent either in taxes or in total expenditures in the use of this illustration. The county, the city, or the special district might equally as well have been used except for the fact that the percentages would vary with every county and every community.) The point to be emphasized in a consistent program of economy is that the *expenditures* of *money from all sources should be considered* and *not merely tax moneys*. To make this point clear it will be well to re-state the data for 1930.

	Percentage of taxes	Estimated percentage of total expenditures
State	26.38	38.29
Counties	41.37	36.03
Special districts.	19.74	14.33
Cities and towns.	12.51	11.35

The reader may use either of these bases. He would do well to consider the proportion of total expenditures which each of these four units is to be charged with in his own community.

Note: In the illustration above it should be remembered that in the case of schools, districts spend a great deal of money which is provided by means of state and county taxes. This item will be kept in mind in discussion of school expenditures.

FOR WHAT PROPORTION OF THE TAXES AND THE EXPENDITURES OF EACH UNIT OF GOVERNMENT ARE SCHOOLS RESPONSIBLE?

Education draws support from three of the major units of government in Arizona, viz., the state, the county, and the local district. For the year 1931 the pertinent data are as follows:

	State	County	Special districts	City	Total
(1) Percent of total expenditures within State (See page 61)..................	38.29	36.03	14.33	11.35	100.00
(2) Percent of total taxes collected in the State........	26.38	41.37	19.74	12.51	100.00
(3) Percent of tax devoted to educational purposes......	48.65(a)	46.00(b)	95.10(c)		
(4) Percent of total State and local taxes charged to education (3) × (2).......	12.83	19.03	18.77		50.63
(5) Percent of total expenditures of each unit in State charged to education.....	28.67(d)	37.77(e)	95.10(c)		
(6) Percent of total expenditures of the State spent by each unit for education (5) × (1).................	10.978	13.609	13.628		38.215

For those who are interested in computing the percentages for themselves or in checking the accuracy or reasonableness of the figures the sources of data and the method of computation will be outlined in some detail.

(1) These are estimates and the method of securing them is outlined on pages 61 and 62. Probably understate total expenditures.

(2) Data secured from page 29 of Tenth Report of State Tax Commission and from Table 26 of same source.

(3) Data secured: (a) from 1931 Report of State Auditor; (b) from Table 17 of Tenth Report of State Tax Commission; (c) computed by eliminating other than school districts.

(4) Secured by multiplying data in (2) by (3). Thus 48.65 percent (.4865) times 26.38 percent (.2638) equals 12.833 percent (.128338), etc. The total 50.63 percent is practically correct. Slight error is introduced because of different figures in various tables; also because of past balances. School costs are 59.60 percent of taxes of state, county, and special districts (Chart " E-2," p. 31, Tenth Report of State Tax Commission). These taxes are 87.49 percent of total (.5960 times .8749 equals 52.14 percent, a difference of 1.51 percent from that given here).

(5) (d) Report of State Auditor for fiscal year which ended June 30, 1931; (e) secured by dividing county levies for education (Table 17, Tenth Report of State Tax Commission — $4,124,616) by total county revenue (p. 100) less amount from state school fund.

(6) Secured by multiplying the figures of (1) by those in (5).
Check on the accuracy of these data is secured by multiply-
ing the 50.63 percent of (4) by 72.6 (the percentage which
1930 tax levies were of expenditures in 1931). The result
is 36.76 percent. Another check is secured by dividing
cost of schools in 1931 (total expenditures less bond re-
demption as given in column 4 of Table 10, p. 37) by total
expenditures of all units in the State — $30,787,669 — ac-
cording to plans of estimate on page 60, the result thus
secured.

Note: Tax levies made in July of 1930 serve as bases for revenues
and expenditures for fiscal year which ended June 30, 1931.

The data seem to indicate that total school expenditures ap-
proximate 40 percent of the total expenditures of all govern-
mental units. Gasoline taxes, fees, licenses, and poll taxes are
all forms of revenue to the raising of which the public contrib-
utes. The writer feels justified in stating that *sound public econ-
omy must consider all expenditures from all sources of revenue
and not merely money raised by means of direct property tax.*

For those who wish to consider tax expenditures and the per-
centage of such expenditures for which schools of all kinds are
responsible the writer has checked the figures from 1923 to 1931
as given by the State Tax Commission in its reports. The per-
centages for taxes and total expenditures follow:

	Taxes	Total expenditures (estimated)	
1923	43.10	42.43	(1923-1924)
1924	46.93	46.24	(1924-1925)
1925	48.94	41.94	(1925-1926)
1926	49.01	42.47	(1926-1927)
1927	47.45	38.14	(1927-1928)
1928	48.50	41.81	(1928-1929)
1929	50.06	42.43	(1929-1930)
1930	52.13	37.95	(1930-1931)
1931	50.48		

In the illustrations given above the first column of percentages
considers only property taxes. Gasoline taxes, poll taxes, and
Federal income taxes are not included in the totals here used.

As expenditures for schools are some 40 percent of the total
expenditures it would not be reasonable to assume that school
economy alone will meet the problem of reduction of taxes. All
governmental units must cooperate and great care must be exer-
cised that children are not handicapped for their future work by
being denied proper educational opportunities.

In the paragraphs which follow the exact effect of reductions in school costs on the tax rate is indicated. The costs and tax rates of two public school units have already been indicated on pages 58 and 59. The cost and consequent tax rate for the support of one of the higher institutions is computed in the following paragraph. Then the saving possible by certain economies is indicated. Similar procedure is followed with the public school units.

For the fiscal year 1930-1931 the pertinent data concerning the University costs are as follows:

a. State expenditures (tax) .... $ 7,102,592.28
b. State expenditures (non-tax) 7,267,774.13
c. Total State expenditures....................... 14,370,336.41
d. Expenditures by all local (non-federal) governmental units within State (estimated) 30,000,000.00
e. University expenditures (tax)................. 814,768.01
f. University expenditures (non-tax) 339,202.59
g. Total University expenditures................. 1,153,970.60
h. Percent of total taxes of State collected by State as a unit (1930 levy) 26.38
i. Percent of State tax chargeable to University (e) ÷ (a) 26.38
j. Percent of total taxes of State chargeable to University (i) × (h) 3.13
k. Percent of total expenditures of State chargeable to University (g) ÷ (d) 3.85
l. State tax rate (1930) $0.80
m. Tax rate chargeable to University (i) × (l) (per $100)..................................... .09184

Data for a, b, c, e, f, g from the State Auditor's office.
Data for l from Tenth Report of State Tax Commission, p. 90.
Data for h from Tenth Report of State Tax Commission, p. 103.

A reduction of 10 percent in University expenditures from tax sources would mean a reduction in the state tax rate of $0.0092 per $100. A reduction of 20 percent in expenditures from tax sources would result in a reduction in the state tax rate of $0.0184 per $100. These reductions should be increased 50 percent because of an imminent reduction of 33 percent in assessed valuations. The possibilities of reduced tax rates then become $0.0138 and $0.0276 per $100 of valuation. For the individual with property assessed at $10,000 the saving by such reduction of expenditures may be either $1.38 or $2.76. The tax rates chargeable to the University (in terms of cents per $100 of assessed valuation) from 1925 to 1931 have been as follows: $0.0913, $0.1385, $0.0944, $0.0999, $0.0733, $0.1392, and $0.09184. The University has been responsible for 9.5 to 14.1 percent (17.7 percent in 1926) of the state taxes, the usual proportion being near the smaller figure.

Costs per pupil have been reduced consistently and needed building construction has been deferred. The data for 1931-1932 show even greater reduction of expenditures.

In the examples of two public schools with their tax rates as given on pages 58 and 59, reductions of 10 percent and 20 percent in school expenditures would produce reductions as outlined below.

First example:

State school tax (1930)	$0.4345
Maricopa County school tax	.9597
High school tax	.54
Elementary school maintenance	.591
Building (10-cent levy)	.10
Bond interest and redemption (school)	.459

Total tax for schools	3.0842
Total tax for school maintenance	2.5252

Total tax for all purposes	$4.30
Reduction of 10 percent in school maintenance tax of county, high school, and elementary school ($0.09597 + 0.054 + 0.0591)	$0.20907
Percent reduction in total tax	4.86
Reduction of 20 percent in school maintenance tax of county, high school, and elementary school	$0.41814
Percent reduction in total tax	9.73

Second example:

State school tax (1931)	$0.4816
Gila County school tax	.5795
High school tax	.0111
Elementary school maintenance	.2189
Bond interest and redemption (school)	.1385

Total tax for schools	1.4296
Total tax for school maintenance	1.2911

Total tax for all purposes	$5.7285
Reduction of 10 percent in school maintenance tax of county, high school, and elementary school ($0.05795 + 0.00111 + 0.02189)	$0.08095
Percent reduction in total tax	1.41
Reduction of 20 percent in school maintenance tax of county, high school, and elementary school	$0.1619
Percent reduction in total tax	2.82

As has been stated before educational expenditures are some 40 percent of the total expenditures of the State. As indicated in Tables 9 and 11 bond interest and bond redemption are responsible for 10 to 15 percent of all educational expenditures. Consequently, maintenance costs of schools are to be charged with 35 or 36 percent of total governmental expenditures within the State. A reduction of 20 percent in school expenditures for maintenance would result in a reduction of some 7 percent in total expenditures. This is stating the general result. The result

in specific instances and the technique of computing the effect on the tax rate have already been indicated in the three examples just cited. School authorities have displayed a fine spirit of cooperation and have economized in every way possible. However, there is a limit below which expenditures can not be reduced and still provide proper educational opportunities for the citizens of a few years hence.

WHY SHOULD SCHOOL SUPPORT DEPEND ON STATE AND COUNTY AID INSTEAD OF BEING ENTIRELY A LOCAL AFFAIR?

Three of the governmental units of Arizona contribute to the maintenance of education in Arizona. The State contributes approximately $2,000,000 each year to the support of common schools in the State. This is planned to provide $25 per pupil in average daily attendance. It also appropriates money for the support of higher institutions. The county also contributes some $4,000,000 for the common schools. The school districts contribute the remaining amounts necessary for school maintenance and pay the costs of buildings constructed now or in the past. The Federal Government contributes annually approximately $250,000 for vocational education and for agricultural education and experimentation at the University of Arizona. (See p. 48.) The Forest Reserve fund adds another $50,000 to the amount to be used for schools. Fees and other incidental sources of revenue add to the total revenue. The approximate percentage of the total school expenditures in the State are from various sources as follows: (1930)

State.............................	26.5
Counties...........................	29.9
Special districts...................	41.7
Federal Government...............	2.1

The money from the state and county fund is distributed on the basis of a minimum of $1,500 to each one-teacher school, $3,000 to each two-teacher school, and between $55 and $80 per pupil in average daily attendance in schools of three teachers or more. In 1931-1932 six counties provided for an apportionment of $80 per pupil, six $70 per pupil, one $65, and one $55 per pupil.

The reason for county aid will be discussed first. It is provided primarily for the purpose of insuring good schooling for every

school child within the county. Concentration of property and of population do not coincide. Examples of inequalities in the ability of various districts to support schools might be given in great numbers but only one county will be referred to. In Gila County the valuation per child in one district in 1931 was $65,061; in another it was $834 per child in attendance at school. The first district was 78 times as able to support schools as was the second. County aid helps to reduce these great differences in ability by taxing wealth where it is situated and distributing it where the needs (the children to be educated) are to be found. In any county the differences in the ability of various communities to support schools can readily be determined by dividing the assessed valuation of a district by the number of children in average attendance at school.

State aid serves to equalize the differences between counties. In relation to children to be educated the richest county is more than four times as able to support schools as the poorest county. The essential data are given on the following page.

Aside from the differences in wealth which exist two other factors should be given consideration. The first is that education is a state function. Legal decisions at various times have emphasized this idea and effective education transcends the limitations of the county or any of its subsidiary units. The second factor is the problem of educating the large numbers of migratory pupils which are found in Arizona. Surveys of rural areas of Pima and of Maricopa County indicate that 30 to 40 percent of the pupils move about during the school year. A large number migrate to or from other states; a still larger number move to other communities of Arizona. The large transient school population places educational responsibilities on counties which the State must help to meet.

State aid, of course, suggests the necessity of similar standards of valuation of property in order that the tax burden may be distributed as fairly and evenly as possible. If state support of education and state government in general were dependent on a sales tax, an income tax, or some combination of non-property taxes, equalization of valuation between counties would not be an issue.

The clearest thinkers in the field of educational finance advocate large units of school support within the state to equalize effort. They also favor the plan of having the State contribute

County	Wealth per pupil in A.D.A. (1930)[1]	Index number of wealth	Wealth per pupil in A.D.A. (1932)[2]	Index number of wealth	Rank in Wealth (1932)
1. Mohave.........	$18,665	410	$14,088	435	1
2. Pinal...........	18,051	394	7,896	244	4
3. Yavapai.........	16,959	370	11,187	345	2
4. Coconino........	12,725	280	8,511	263	3
5. Cochise.........	12,332	272	7,340	227	5
6. Gila............	11,816	258	4,601	142	9
7. Greenlee........	11,208	254	7,304	225	6
8. Pima...........	9,778	214	6,406	198	8
9. Yuma...........	8,280	182	6,732	208	7
10. Santa Cruz.....	6,425	140	4,224	130	10
11. Maricopa........	5,493	120	4,012	124	11
12. Apache.........	4,803	104	3,988	123	12
13. Graham.........	4,568	101	3,240	100	14
14. Navajo..........	4,536	100	3,374	104	13
State............	$ 9,352	206	$ 5,700	176	

[1] Valuations from Tenth Report of State Tax Commission, pp. 102-103. Attendance (elementary and high school) from Tenth Biennial Report of State Superintendent of Public Instruction. pp. 179-197.
[2] Valuations from reports of State Board of Equalization. Attendance data from office of State Superintendent of Public Instruction (1931-1932).

a large proportion (some suggest 60 to 75 percent) of the total cost of education to equalize taxes and insure adequate educational opportunities for all children. The present plan of state and county aid to schools is sound in principle and should be

continued. Any modification should be in the direction of increased support; a decrease would be a decided step backward. The children in even the poorest communities must be assured of proper education.

IV. SUGGESTIONS CONCERNING SOLUTIONS

WHAT POSSIBLE ECONOMIES MIGHT BE PROVIDED?

The data on page 64 indicate that school costs have approximated 45 to 50 percent of the direct property taxes and 40 percent or less of total expenditures. The data of Tables 12 and 13 indicate that for 1921 to 1931 school attendance increased 67 percent while total expenditures increased only 43 percent. (See columns 4 and 6 of Table 13.) In other words, school attendance during that time increased 1½ times as rapidly as did total costs including expenditures for buildings and bond interest. From 1930-1931 to 1931-1932 educational expenditures from taxation were decreased $321,343 while expenditures for other purposes increased $468,251.

Total costs per pupil in elementary and secondary schools combined for the last ten years are as follows:

1920-1921	$157.31	1926-1927	$133.95
1921-1922	144.94	1927-1928	130.62
1922-1923	137.66	1928-1929	142.57 [1]
1923-1924	152.43	1929-1930	145.13 [1]
1924-1925	140.72	1930-1931	131.30
1925-1926	141.85	1931-1932	123.18

[1] Building expenditures increased (see Table 9).

These data show definitely the attempts to keep school expenditures on an economical basis.

Data concerning school costs are quite likely to be misleading unless there is further analysis of maintenance costs with variations in size of schools carefully considered. Thus, in 1930 the pertinent data concerning costs in Arizona high schools were as outlined below: [1]

Number of teachers	Number of schools	Total attendance	Average daily attendance per school	Average cost per pupil
2- 5	14	428	30.4	$254.13
6- 9	15	1356	90.4	227.38
10-15	17	2516	147.4	198.24
16-24	8	2796	349.5	168.31
25 plus	4	7103	1775.7	118.14

[1] Data from Tenth Biennial Report of State Superintendent, summarized by Committee on Taxation Problems, State Education Association, C. E. Rose, chairman.

For elementary schools the essential facts were as follows:

Number of teachers	Number of schools	Total attendance	Average daily attendance per school	Average cost per pupil
1	163	2227	13.7	$131.61
2	75	2335	31.1	112.63
3	27	1428	52.8	105.46
4- 5	38	3131	82.4	111.00
6- 9	34	6180	181.7	85.11
10-14	12	3495	291.2	80.75
15-24	17	8488	499.3	83.08
25 plus	21	36675	1746.4	84.92

These data indicate clearly the differences among schools especially with respect to maintenance costs. Economy is a matter for individual districts and general data tend to obscure the problem and its specific solutions.

Suggestions for economy will vary with the school involved. In some one-room schools it may be advisable to transport pupils to other schools. In schools with two or more teachers it may be possible so to arrange the work that fewer teachers may be required. In some high schools the number of offerings may be reduced. Extreme care is necessary that the efficiency of schools is not permanently interfered with by these proposed measures of economy. The policy in each school becomes an individual problem. The effect of moves for economy should be carefully determined by means of the technique suggestetd on pages 65 and 66.

The schools have already made very definite moves to aid in the reduction of expenditures. The salaries of teachers have been reduced from 5 to 25 percent. In individual cases the reduction has been even greater. It should be kept in mind that schools represent some 40 percent of total expenditures; that a considerable portion of this is for debt service which must be cared for; that reductions which are made must come out of maintenance funds, and that such reductions may have little effect on the total tax rate especially in view of the fact that other agencies may maintain the old level of expenditures or even increase them.

WHAT MODIFICATIONS OF ORGANIZATION OR OF POLICY MIGHT BE INSTITUTED?

One factor which accentuates the problem of financing public expenditures is lack of coordination of the beginning of the fiscal year and the time of availability of revenues. The fiscal year runs from July 1 of one year to June 30 of the succeeding year. Tax collections are made in November and April. Tax moneys for State purposes become available about December 15 and May 15. In order to have money to care for expenditures it becomes necessary to borrow. This the State does by the issue of tax anticipation bonds which are sold. Until money is available either by the receipt of taxes or the sale of tax anticipation bonds vouchers or warrants as compensation for materials and services may not be honored. If honored they may be discounted at a high rate of interest. Whatever procedure is followed the general situation is not the most satisfactory one. Delinquency of tax payments would add to the seriousness of the problem. This difference in time of the beginning of the fiscal year and collection of taxes concerns every governmental unit — state, counties, cities, and special districts. Only the State and the special district will be dealt with as examples, however.

The practice of providing for current expenditures of the State by means of tax anticipation bonds is not new. Reports of the State Auditor indicate that tax anticipation bonds have been issued as follows:

1921 [1]	$1,500,000	Page 13 of Tenth	Report of Auditor
1922	2,500,000	Page 15 of Eleventh	Report of Auditor
1923	1,850,000	Page 12 of Twelfth	Report of Auditor
1924	1,750,000	Page 14 of Thirteenth	Report of Auditor
1925	1,900,000	Page 13 of Fourteenth	Report of Auditor
1926	2,900,000	Page 15 of Fifteenth	Report of Auditor
1927	2,500,000	Page 14 of Sixteenth	Report of Auditor
1928	4,400,000	Page 15 of Seventeenth	Report of Auditor
1929	3,700,000	Page 15 of Eighteenth	Report of Auditor
1930	4,000,000	Page 17 of Nineteenth	Report of Auditor
1931	4,100,000	Data from State Auditor	
1932	4,200,000	Data from State Auditor	

[1] Fiscal year ended June 30.

The writer was unable to discover readily the practices previous to 1921 but the data are sufficient to show that borrowing to meet the current needs of the State is quite common. If the figures given above are compared with those on page 13 it will become apparent that it has been necessary for the State to bor-

row each year amounts ranging from 35 to 65 percent of the total tax collections.

Data for school districts are less complete. Figures from the biennial reports of the State Superintendent of Public Instruction indicate that school districts have been forced to issue warrants, the payment of which had to be deferred until taxes were collected. Interest on registered warrants has been paid in recent years in the following amounts:

1926-1927........$30,464.95		1928-1929........$29,449.67	
1927-1928........ 30,035.76		1929-1930........ 28,746.71	

This is a very small percentage of total expenditures.

There are differences of opinion as to the advisability of borrowing to meet current needs until taxes are collected and made available for use. It may be economy to borrow from time to time rather than have money in the treasury in advance of actual expenditures. The writer feels that efficiency and confidence would be fostered by the practice of cash payments rather than dependence on various forms of borrowing. To put a plan of cash payment into operation it would be necessary to levy a higher tax for several years to establish a sufficiently large balance that expenditures from July to December might be paid out of available funds. The taxes collected in November and December would then care for expenditures for the last half of the fiscal year, and the taxes collected in April would establish the balance necessary for meeting the expenditures of the first half of the succeeding fiscal year.

This plan has some difficulties in the way of its successful execution and may not be expedient at the present time. The writer believes that its benefits in efficient fiscal administration are such that it should be considered and adopted. Installment buying is no more commendable in public than in private enterprises. It might be possible to change the beginning of the fiscal year to January 1 but the defects of such a proposal far outweigh its advantages.

In planning for the construction of future school buildings it would be wise to consider payment for such construction in as brief a time as possible. Each generation has enough obligations of its own to care for without the necessity of paying for debts of the past. Communities might properly consider the depreciation plan of financing building construction. Briefly it is the " Christmas savings club " idea applied to public finance. Money is deposited each year to accumulate interest until needed. The

same building will cost $60,000 by the depreciation plan, $100,000 by the cash plan, and $157,500 by the bonding plan, the bonds running for twenty years with interest at 5 percent. At 6 percent the corresponding costs are $54,369, $100,000, and $167,650. It would be well to consider and if at all possible, establish a pay-as-you-go policy. It would mean greater attention to plans for expenditures and would tend to foster economy.

WHAT MODIFICATIONS OF THE PRESENT PLAN OF PROVIDING REVENUE MIGHT PROVE HELPFUL?

The facts so far collected and presented indicate that governmental costs and the taxes necessary to supply revenue to meet these costs have both increased. The idea has been stressed that economy must be planned for by all governmental units — state, counties, cities, and schools — and cannot be expected as a peculiar responsibility of the schools or of the State. The plan of providing necessary revenue must also receive careful consideration.

The property tax alone is not considered the most satisfactory method of providing revenue. It has been pointed out before (p. 56) that income as well as wealth should be considered in judging ability to contribute to the support of government. The fact that property valuations have decreased nearly 50 percent since 1920 would serve to cast some doubt as to its feasibility as a source of revenue. Wholesale reductions of valuations will necessitate a higher tax rate unless expenditures are reduced in like proportion. Assessment of property at full value and the granting of few exemptions will probably attract more capital and foster better conditions in general than will lower valuations, many exemptions, and a higher average tax rate.

Because of these and other factors it would be well to consider the possibility of other means of providing revenue. Opposition to new forms of taxation is often to be explained on the basis that many people fail to recognize that *these new taxes are designed to supplement and supplant the present property tax rather than being an additional scheme for extorting money from the public.*

Of successful practices in other sections of the United States a few are indicated in this and succeeding paragraphs. One of these is the personal income tax. This type of tax is levied by

the state unit in 26 states, more than half of the total number. Four of these states —Arkansas, Delaware, Massachusetts, and Wisconsin — definitely " earmark " or allocate this revenue for the use of schools. The most satisfactory type of personal income tax is of the graduated type.[1]

Business income taxes varying from 1 to 5 percent on the gross returns of business have met with favor in certain quarters. Five states have business income taxes, the revenue from which is definitely allocated for schools.

Sales taxes have much to commend them in spite of the opposition they engender. The writer believes that all citizens would take a more active and intelligent interest in the government and its expenditures if they felt definitely that they were contributing to its support. If the sales tax might be of the *selective* type, collecting revenue from the sale of articles not absolute necessities, it would be both a just and effective tax. Two of the most common sales taxes are briefly discussed here.

1. The gasoline tax is in effect in all the states. Four states allocate at least a portion of this tax for school support. The introduction of the automobile has brought other and more difficult problems than the construction and maintenance of highways. The suggestion that part of the gasoline tax might be diverted to the general fund might receive serious thought when major highway projects are cared for. The gasoline tax in Arizona nets some three million dollars per year. The states allocating gasoline taxes for schools are Florida, Georgia, Louisiana, and Texas.

2. The tobacco sales tax is levied in 12 states. Five of these states allocate the revenue thus produced for schools.

Inheritance taxes are in use in 45 states. Four of these states—Kentucky, Michigan, Montana, and Virginia—allocate this revenue to schools. The inheritance tax produces a comparatively small amount of revenue in Arizona.

Severance taxes are growing in favor. The basic idea in this type of tax is that taxes are levied on minerals or timber removed from the soil. It provides a fair basis for revenue and also aids in conservation of natural resources. Six states—Alaska, Arkansas, Louisiana, Minnesota, Montana, and Oklahoma—allocate their severance taxes to schools.

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[1] Detailed discussion of the personal income, business tax, severance, and property tax will be found in a 60-page booklet, *The Model Tax Plan,* published by National Tax Association, 195 Broadway, New York City. Price 25 cents.

The writer is not certain that the adoption of any or all of these taxes for state revenue would provide enough return to care for state expenditures and thus leave property to be taxed only to care for the needs of counties and other local units. Some preliminary study indicates that these taxes might provide one-third to one-half of the revenue needed by the state government. As a result the property tax might be reduced considerably. All school people and others should carefully study possibilities of new sources of revenue as well as proposals for reduction of expenditures.

V. SUMMARY

WHAT ARE THE OUTSTANDING CONCLUSIONS OF THIS STUDY?

For convenience the most important findings of this study are brought together in a small compass of space. Supporting details and extended discussion will be found in the body of the report.

1. The total taxes levied by all units of government in the United States are slightly in excess of ten billion dollars per year. Total expenditures are probably 30 percent more than this.

2. Governmental expenditures of all kinds have approximated 10 percent of the national income during the past fifteen years. Due to reduction of income, expenditures were 14 percent of the income in 1930 and 20 percent of the income in 1931.

3. Taxes have consistently been lower in America than in foreign countries. Available data indicate their taxes have been 140 to 220 percent as high as ours. There have been some modifications of this relationship during the past year.

4. School expenditures have been chargeable with less than 25 percent of the total taxes, less than 2½ percent of the income, (3 percent in 1930), and less than 1 percent of the tangible wealth. In Arizona the schools have been chargeable with slightly higher proportions of total taxes and income, due to sparseness of population and rapid development of the State.

5. Data concerning total expenditures are somewhat difficult to secure. Direct property taxes total approximately $22,000,000. Revenue from "non-tax" sources also serve as the basis for governmental expenditures. Careful check on available revenues reveals estimated expenditures of $31,000,000. A fairly accurate estimate of expenditures (slightly understating the total) is secured as follows:

  (a) State taxes plus 80 to 100 percent additional.
  (b) County taxes plus 20 percent additional.
  (c) City taxes plus 25 percent additional.
  (d) Special district taxes.

This estimate is used in lieu of complete data on expenditures which are not readily available.

6. Taxes serve to give an idea of trends of expenditures within the State. Data which are comparable because of the same

standards of computation date from 1920. From that time to the present (1931) state taxes increased 53 percent, county taxes 48 percent, city taxes 42 percent, special district taxes 6 percent, and total taxes 41 percent.

7. There are several reasons for this increase in general taxes. The most important ones are: (a) increase in population; (b) popular demand for increase and intensification of governmental services; (c) past obligations, especially bonds; (d) the decrease in the purchasing power of the dollar.

8. Education, roads and bridges, administration, and public institutions are major items of public expenditures. The major portion (75 to 85 percent) of the money for schools comes from direct property tax while less than half of the money for other state expenditures comes from this source. In 1931 education was chargeable with 48.65 percent of the *State* taxes and only 28.67 percent of the expenditures made by the State. As schools draw such a relatively large proportion of their support from property taxes a fairer picture of the whole situation is secured by considering total expenditures rather than merely *tax* moneys.

9. There are good reasons why school costs have shown a definite increase. Dependable data are available for the decade from 1920-1921 to 1930-1931. During that time the general population increased 32 percent, elementary school attendance 44 percent, high school attendance 172 percent, total school attendance 57 percent. At the same time total elementary and secondary school costs increased 43 percent. During this period much new building construction was carried on necessitating much money for bond interest and bond redemption.

10. The Federal Government spends annually some five billion dollars. This money is raised by various taxes—excise taxes, sales taxes, and taxes on incomes. The income tax is the most important single source of revenue. Arizona has been contributing some two millions to this income tax during the last few years. In 1931-32 the amount Arizona contributed was less than one million dollars.

11. Arizona receives from the Federal Government for expenditure as a state slightly less than four million dollars. In addition the Federal Government itself spends a considerable amount of money for veterans' hospitals and compensation.

12. The state, counties, cities, and special districts secure their necessary revenue from direct property taxes, gasoline tax, fees,

licenses, subventions from the Federal Government, and other similar sources. All of these constitute a form of tax although only the direct property tax is so referred to in many writings. The direct property tax is the source of 70 to 75 percent of the revenue used as a basis for governmental expenditures.

13. The valuation of property in Arizona has declined from 884 millions in 1920 to 674 millions in 1931, a decrease of 24 percent and to 453 millions in 1932, a decrease of 49 percent. From 1920 to 1931 the value of railroads increased 9 percent, city lots 34 percent, and other property 27 percent; mining property decreased 48 percent, land 16 percent, and livestock 70 percent. Such decreases in valuations will necessitate a higher tax rate unless total expenditures are decreased in like proportion.

14. The six major classifications of property in 1930 were the following proportions of the total valuation: mines 39.76 percent; town and city lots 17.53 percent; railroads 15.50 percent; land and improvements 11.91 percent; livestock 1.77 percent; all other property 13.53 percent. These proportions vary from year to year.

15. More than three-fifths (61.16 percent) of the area of the State is under Federal control; 11.28 percent is under state and other public ownership, thus making a total area under public control of 72.46 percent. Consequently much of the State produces no revenue for state support. Exemptions increase this "non-productive" area still further.

16. The income of the State from 1927 to 1930 totaled 200 to 325 million dollars per year. In 1931 the income approximated 120 million dollars. Mineral products have been the major source of productive income, agriculture second, and manufacturing third.

17. For best results the total tax rate and the tax rate for schools in individual communities should be computed. The technique for doing this is outlined on pages 57 to 59.

18. Of the total taxes of the State the State collects and spends approximately a fourth (27.45 percent), the county two-fifths (40.17 percent), special districts one-fifth (20.69 percent), and the city one-eighth (11.84 percent). When correction is made for so-called "non-tax" sources the proportion of expenditures each unit is chargeable with becomes as follows: state 38.29 percent; county 36.03 percent; special district 14.33 percent; and the city 11.35 percent.

19. Schools are responsible for varying proportions of the total taxes and expenditures of each unit of government. In 1931 they were chargeable with 48.65 percent of the State taxes, 46 percent of the county, and 95.10 percent of the special district taxes. Schools were chargeable with 28.67 percent of state expenditures, 37.77 percent of county expenditures, and 95.10 percent of special district expenditures. They were charged with 50.62 percent of the total taxes collected and 38.215 percent of the total expenditures (some estimates run slightly above 40 percent).

20. The effect of reductions in the school expenditures on total expenditures and on the tax rate can readily be determined by means of the technique of computation outlined on pages 65 to 67.

21. In 1930 school support came from the following sources:

State.....................	26.5 percent
Counties.................	29.9 percent
Special districts..........	41.7 percent
Federal Government.....	2.1 percent

County and state aid in the amount of $1,500 per one-teacher school, $3,000 per two-teacher school, and $55 to $80 per pupil in average daily attendance in schools of three or more teachers is made available through the proper channels.

22. County aid is intended to equalize differences among districts within the county. In one county, for example, the richest district has 78 times as much wealth per pupil as has the poorest district.

23. State aid is planned to equalize differences among counties. The wealthiest county of Arizona has more than four times as much wealth per child as has the poorest county. The fact that education is the concern of the state rather than of local units and the large numbers of migratory pupils are additional reasons for the use of state aid.

24. Both county and state aid for schools should be continued. Any modifications should be in the direction of increasing the amount of such aid.

WHAT ARE THE SUGGESTED PROCEDURES IN DEALING WITH THE PRESENT SITUATION?

1. Economies have already been instituted in many lines. Economy consistent with efficient results has been practiced in Arizona schools for years. There is a possibility that some sav-

ings may be instituted by closing some one-room schools and transporting the pupils, by consolidating smaller groups of pupils, and by reducing the curricular offerings of some schools. Great care must be exercised that such moves do not result in impaired efficiency. Reduction of teachers' salaries has been put into operation in many schools and the value of further moves in this direction is open to grave question, especially in certain districts. Attention is again called to these facts: (a) school costs approximate 40 percent of total expenditures; (b) about 10 to 15 percent of the school expenditures (4 to 6 percent of total expenditures) are due to debt service; (c) reductions then must be made on maintenance costs (34 to 36 percent of total expenditures); (d) a reduction of 20 percent in maintenance costs (which cannot be done without seriously injuring the schools) will mean a reduction of 7 or 8 percent in total expenditures; (e) real economy calls for the whole-hearted cooperation of all agencies supported from public funds. Arizona school men have displayed remarkable skill in facing the problems of decreased income together with increased numbers of pupils to care for. Each district has an individual problem to face and it must attack and solve it as such.

2. In the future public expenditures for all purposes and especially for schools should be on a cash basis. Serious consideration should be given to the possibility of beginning the fiscal year with a balance sufficiently large to carry the governmental unit for the first half of the year, thus eliminating the necessity for running on borrowed money. Some schools now follow this plan and it should become a universal practice.

3. Building construction of the future should consider the depreciation and the cash plans as bases for financing. Where bonds are used they should be of the serial type and run for comparatively short periods of time.

4. Serious consideration should be given to other plans of raising revenue to supplement or even to supplant the property tax. Income taxes, selective sales taxes, inheritance, and severance taxes are used successfully in various states and the funds thus provided allocated for the use of schools.

5. Careful study should be devoted not only to the present financial situation and to proposals for possible economies, but also to the fairest and most feasible methods of providing revenue.

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