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SAVINGS AND THE INCOME DISTRIBUTION

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AND
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STUDIES OF FAMILY EXPENDITURES and savings have hitherto sought explanations of variability in terms of the income of the individual family, its size, occupational group, race and national origin, region and size of community. The variation in consumption patterns among families in different sections of the country has been called a regional difference and was left as not yet susceptible of expression in a numerical relation of any form. Differences in consumption patterns at given income levels at different dates have similarly been treated as due to changes in consumer attitudes and preferences. It is true that in both comparisons some thought has been given to the possibility of isolating the effect of variations in the price level. Price level is, however, only one of potentially measurable factors that make for differences between different communities at the same time or in the same community at different times. Among the other characteristics of communities that can be expressed in quantitative terms, the level and distribution of income may be assumed to be the most important. The purpose of this paper is to indicate that variations in the pattern of consumption and savings among groups of families at given income levels may be explained to a considerable degree by differences in the level and distribution of income.

The savings pattern, namely, the percentage of income saved at each income level, has been related to the income distribution for all the recent sample surveys that provided data on both savings and income distribution. The association of the savings pattern with the income distribution shows that income distribution is an important determinant of the proportion of the income at each income level that is allocated to savings.

In general, the smaller the percentage of families in the higher income brackets, the greater the percentage of income saved at each income level. Among groups of nonfarm families, in different areas or at not widely separated periods, the percentage of income saved appears to approach a common value at the same relative income position; that is, at the same decile or percentile of income. Among farm groups there is likewise a tendency for the percentage of income allocated to savings in different areas or at different times to differ less at the same relative position than at the same absolute point on the income scale. The ratio of savings to income is, however, uniformly higher among farm than among nonfarm families whether the comparison is based on the dollar income or the relative income position.

The savings pattern is altered, however, by changes in the size of the consumer unit. All the available studies of savings patterns by income and size of family show that for families of a given type in a given community the percentage of income saved is higher at the higher income levels at any given point in time. But at a given income level savings decrease with increases in the size of the family. Accordingly, savings related to either the absolute income or the relative income position are higher when the average size of the family is smaller.

A tendency toward a stable relation between the percentage of income saved and the relative income position among families of the same size implies that raising the general level of income in a community has the effect of increasing the expenditures and decreasing the savings of families at every level. A general shift to higher incomes would not effect as great an increase in total savings as would be expected on the basis of the pattern of savings in relation to income that was characteristic of a period when incomes in general were low. To the extent that any such changes are not offset by price increases, the increase in the demand for goods accompanying a general rise in income would exceed any predictions based on the earlier consumption patterns.

To explore the relation between savings, income, and income distribution more fully, existing data should be analyzed and new collections planned to extend our knowledge of the influence of many factors in quantitative terms. In a given community, changes in the income situation are likely to be associ-

ated with changes in occupational groupings, in the average size of family, and in the price level. From time to time such composites as all urban communities change with respect to the same factors, and in addition to the regional distribution of the population.

The difference between the savings pattern of farm and nonfarm families suggests a difference between entrepreneurial nonfarm families and the wage and salary group. That survey data do not reveal a consistent difference between these groups in the pattern of expenditures and savings is probably due to inaccuracies of the enumeration methods in the case of the nonfarm entrepreneurial group. Probably most reports on the income of this group are, in reality, an estimate of withdrawals, so that both income and business savings are subject to a large biased error. Such an error inevitably alters the form of the savings pattern. The development of more precise information about this group would require extensive experimentation with procedures differing considerably from those used in the past.

Family size has always been recognized as an important determinant of expenditures and savings. Nevertheless, it is impossible to carry through the various expenditure studies a comparison of families of the same type or size. The reports on some surveys have presented no data for family size groups and no consistent mode of classification is found in the reports of the surveys that included tabulations by size or type of family. Enough information is available, however, to make possible the development of a procedure for eliminating the influence of family size from the data for all types of family. Work in progress at the Bureau of Labor Statistics indicates that there is sufficient stability in the relative differences among families differing in size to provide a method for converting the data from various studies to a common base with respect to family size.

Two income situations would lead to a difference in the average size of family at each income level even though the average size of family in the total population were the same. Furthermore, it is doubtless true that higher incomes usually lead to more and smaller families, as consumer units. Unless it is possible to foresee large enough collections of data to provide for separate tables for each size of family, the approach to this

problem must necessarily be via some analytical procedures. For estimating the aggregate effect of alterations in the savings pattern, data on the distribution of the population in consumer units of different size is absolutely essential.

Changes in the savings pattern in relation to absolute income from one income situation to another may occur in stepwise fashion. To ascertain the nature of the lags that probably exist, data on the expenditures and savings of families in the same area need to be collected for a considerable period. Such comparisons as it is possible to make at present are confined to large groups of communities or are hampered by significant differences in the coverage and designs of the surveys and the methods of tabulation. Nevertheless, some indications of the nature of the changes in the savings and expenditure patterns could be read from existing data through more intensive analysis. In plans for future surveys serious consideration should be given to the provision of data for separate communities that were covered at earlier dates.

Existing data provide a much better basis than is ordinarily recognized for explaining the influence of price changes on the pattern of expenditures and savings. So far as price and income levels are positively correlated, changes in the savings pattern in terms of absolute income toward stability in terms of relative income may be largely a matter of price differences. Preliminary investigations have revealed that price differences are only a partial explanation of the apparent tendency for families, whatever their income, to relate their consumption to the community income situation.

1 Savings Pattern

In all studies of family expenditures in relation to current income the pattern of savings exhibits the same general characteristics. From average dissavings in the lowest income brackets there is a progression to rapidly increasing average net savings in the highest income brackets. Notable variations in the pattern of savings among groups of families appear, however, in the data from various surveys.

During the last century and a half there have been many studies of family expenditures.[1] Before the first large scale

[1] Williams and Zimmerman, *Studies of Family Living in the United States and Other Countries* (Department of Agriculture, Misc. Bul. 223, 1935).

studies undertaken by the Department of Labor, information on income was seldom obtained and used in tabulating expenditure. In the two studies made by the Department of Labor in 1888 and 1901, income was entered on the schedule, and in the second, expenditures by income brackets were tabulated for many groups of families.[2] Net savings by income bracket were not, however, given in the published report but can be calculated as the difference between income and expenditures. In the report of the 1918–19 survey the basic tables show savings by income bracket, calculated as the difference between income and reported total expenditures.[3] The absence of data on income and expenditures in family budget studies was so common that Allen and Bowley, in their analysis of variations in family expenditures, found it necessary to use total expenditures in lieu of income.[4]

The first large studies to obtain direct estimates of savings were made in 1934–36 — the Study of Money Disbursements of Wage Earners and Lower Salaried Clerical Workers, 1934–36, and the Consumer Purchases Study, 1935–36. A section of the schedule in each of these studies was devoted to reports on the changes during the year in itemized lists of assets and liabilities. Total savings or dissavings and the details of the changes in specified assets and liabilities were tabulated for all sample areas.[5] Estimates of savings by income bracket were developed from data for the sample areas for all American families and single individuals and for families in the different regions and in different sizes of community.[6] In 1942 a similar study of a small sample of American families and single consumers was

[2] *Seventh Annual Report of the Commissioner of Labor, 1891* and *Eighteenth Annual Report of the Commissioner of Labor, 1901–2* (Department of Labor).

[3] *Cost of Living in the United States* (Bureau of Labor Statistics, Bul. 357, May 1924).

[4] *Family Expenditure, A Study of Its Variation* (London, 1935).

[5] *Family Expenditures in Selected Cities, 1935–36*, Bul. 648, Vol. VIII, Study of Consumer Purchases: Urban Technical Series (Bureau of Labor Statistics); *Changes in Assets and Liabilities of Families*, Five Regions, Urban, Village, Farm (Department of Agriculture, Misc. Publication 464, March 1942); *Money Disbursements of Wage Earners and Clerical Workers, 1934–36, Summary Volume* (Bureau of Labor Statistics, Bul. 638, 1941).

[6] *Consumer Expenditures in the United States*, Estimates for 1935–36 (National Resources Committee, 1939); *Family Expenditures in the United States*, Statistical Tables and Appendixes (National Resources Committee Publication released by the National Resources Planning Board, 1941).

made. It provided estimates of savings by income bracket for all urban, all rural nonfarm, and all farm families, and single consumers.[7] Thus, only in recent years have comprehensive data on the relation of savings to income been collected and made available for analysis through publication.

The Consumer Purchases Study, 1935–36, and the Study of Spending and Saving in Wartime, 1941–42, showed that farm families save more than village families and village families more than urban families at the same absolute level of current income, whether total income (money and nonmoney) or simply money income is used as the basis of comparison. In some regions savings were higher among village families than among small urban families at the same income level, in others the savings patterns were practically the same. Similarly, only in part of the regions did a difference appear in the savings of small urban families compared with families in middle-sized and large cities at the same income level. Savings of families in New York and Chicago were, however, lower than those of comparable families in smaller communities in any region. The following comparisons indicate that in general where there was a difference in the savings pattern between communities of different sizes in the same region, there were significant differences in the level and distribution of income; where no difference appeared in the relation of savings to income, the income distributions in the community groups were similar.

2 Savings of Different Population Groups, 1935–1936

The association between savings and income distribution is obvious in the summarized data for three broad population groups from the Consumer Purchases Study (Table 1). The general income level was lower in farm areas than in villages and lower in villages than in cities. Savings at each income bracket were higher in farm areas than in villages and higher in villages than in cities. Comparison of the data for villages and for cities reveals that among both groups of families the percentage saved at the 9th decile was about 12 percent, at the

[7] *Spending and Saving of the Nation's Families in Wartime* (Bureau of Labor Statistics, Bul. 723, 1943); *Income and Spending and Saving of City Families in Wartime* (Bul. 724, 1943); *Rural Family Spending and Saving in Wartime* (Department of Agriculture, Misc. Publication 520, June 1943).

TABLE 1

Rural-Urban Differences in Family Savings

Distribution of Families in Three Types of Community by Income and the Percentage of Income devoted to Savings by Income Group

	INCOME DISTRIBUTION (CUMULATED)			SAVINGS AS A % OF MONEY INCOME		
INCOME GROUP	Farms	Villages	Cities	Farms	Villages	Cities
Under $1,000*	100.0	100.0	100.0	d e f i c i t		
1,000– 1,250	43.4	49.9	60.9	—.9	—.9	—3.7
1,250– 1,500	31.7	38.6	50.1	5.7	1.0	—.9
1,500– 1,750	22.8	29.2	40.9	11.0	3.2	.3
1,750– 2,000	16.4	21.9	32.6	15.8	4.3	2.0
2,000– 2,500	12.0	16.7	25.3	20.8	8.5	5.3
2,500– 3,000	6.9	9.9	15.6	28.6	11.4	8.5
3,000– 4,000	4.3	6.3	10.2	34.4	14.5	12.7
4,000– 5,000	1.9	3.4	5.1	43.3	22.1	15.6
5,000–10,000	1.2	2.3	3.4	52.6	37.7	20.5
Average	1,215	1,409	1,855	11.4	11.0	9.5

Family Expenditures in the United States, Statistical Tables and Appendixes (National Resources Planning Board, 1941).

* Includes all families receiving some relief.

95th percentile about 15 percent, and at the 97th percentile about 20 percent. Savings among farm families were, however, higher than among nonfarm families of the same relative income position.

The correspondence between savings and income distribution in the case of urban and village families appears when finer population groupings are considered. Chart 1, based on data for families in villages and cities of various size ranges, shows that a large part of the variation in savings is eliminated by comparing families at the same relative income level. The size of family did not differ enough among the various groups to account for the differences remaining. The apparent systematic deviations of the large city and metropolitan groups from the general pattern can be considered as arising from variations in the relative accuracy of the data on income distribution.

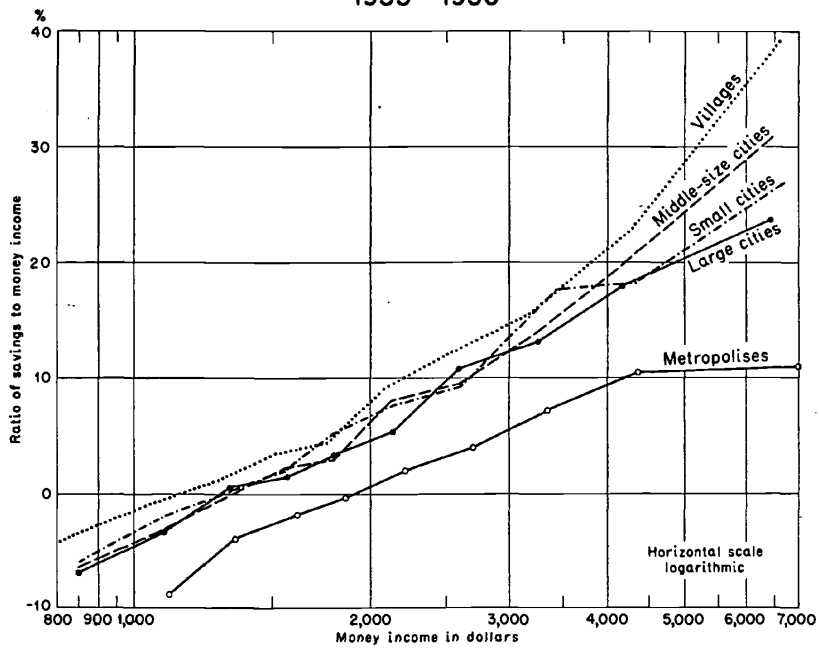
Income distributions based on survey data are now known to be subject to biases of two kinds. First, there is a tendency toward underestimations of the frequency in the higher income brackets; second, reports at all income levels tend to be understatements.[8] The income distributions used in displaying this association were adjusted for the first type of error.[9] The ad-

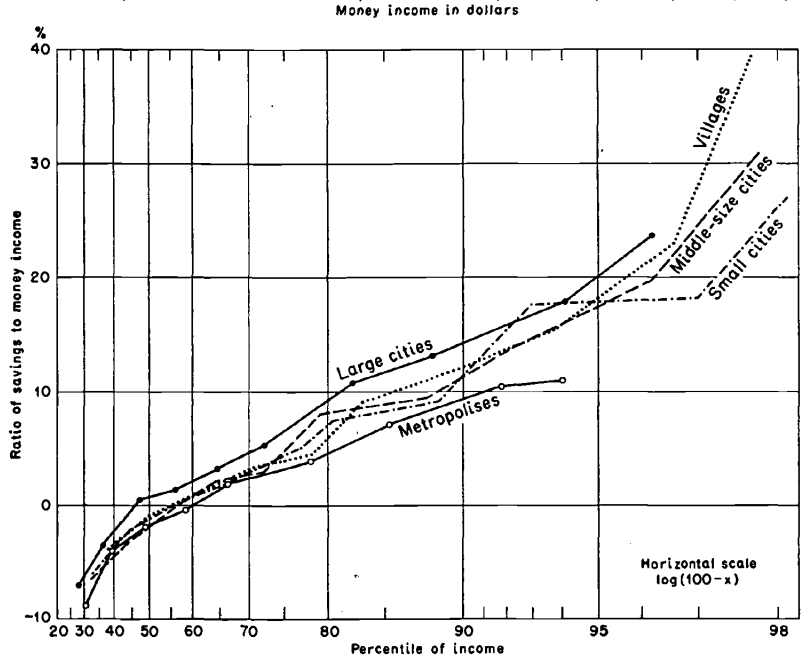
[8] *Family Spending and Saving in Wartime* (Bureau of Labor Statistics, Bul. 822, in press).

[9] *Consumer Incomes in the United States* (National Resources Committee, 1938), App. A.

CHART 1

Savings of Nonfarm Families in Relation to Income and Income Distribution 1935 – 1936





justment of basic survey samples involved some arbitrary assumptions and the effect of the second type of error in survey data could not be measured. Accordingly, the deviation of any one group from the general rule may be almost entirely due to a relatively less accurate estimate of the income distribution.

As shown in Chart 2, the general relation between the savings pattern and income distribution appears to hold for smaller combinations of communities. The savings data are for native white unbroken families in twenty-five groups of nonfarm communities. A wider range of family types was covered in the North Central and Southern areas than in the other survey areas (see note 5). The income distributions used to associate with the savings data are, except for villages, estimates based on the survey data for all types of family. In the case of the villages, in the absence of more comprehensive information, it was necessary to use the survey income distributions for native white unbroken families, which leads to an overestimate of the relative number of families in the higher income brackets. In the Southern areas, the income distributions are for white families. None of the income distributions was adjusted for the greater refusal rate in the higher income groups. The data for all communities would doubtless have conformed more closely to the common pattern had it been possible to eliminate the effects of variations in the size of family and in the coverage of the data on income distribution.

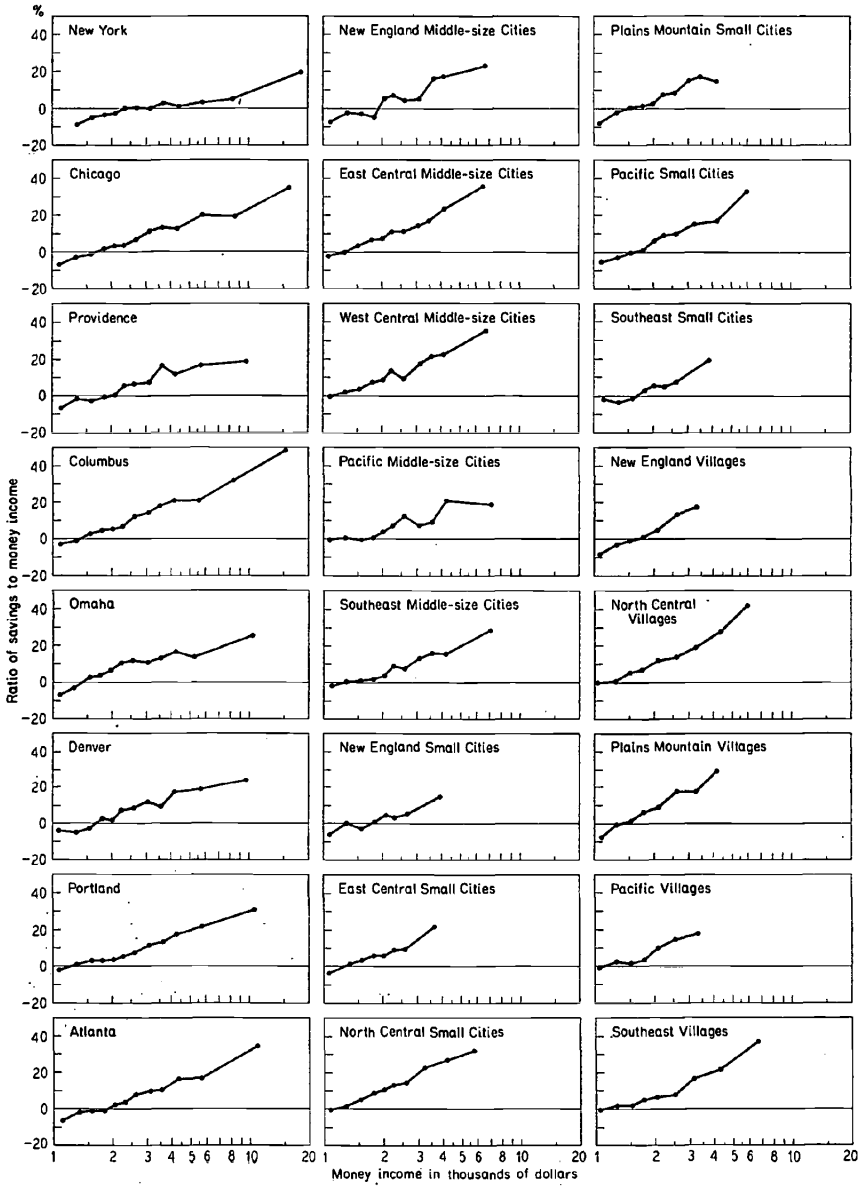
The two village groups emphasized in this chart present an interesting comparison. The median income was approximately the same in the Middle Atlantic and North Central villages as among white families in the southeastern villages. The percentage of families with incomes above $2,500 was, however, much higher in the southern, 12.4, than in the northern group of villages, 7.0. The percentage of income saved at each income bracket was consistently lower in the southern than in the northern villages. A similar comparison of two communities with the same median income is shown in Table 2. In Denver, where there were relatively more families in the higher income brackets, the percentage of money income saved tended to be lower than in Portland, Oregon.

The distinct position of the savings pattern for New York families cannot be explained in terms of the size of family or

CHART 2

Savings of Nonfarm Families in Relation to Income and Income Distribution, 24 Groups of Communities 1935 – 1936

A. Percentage of Income Saved in Relation to Annual Money Income

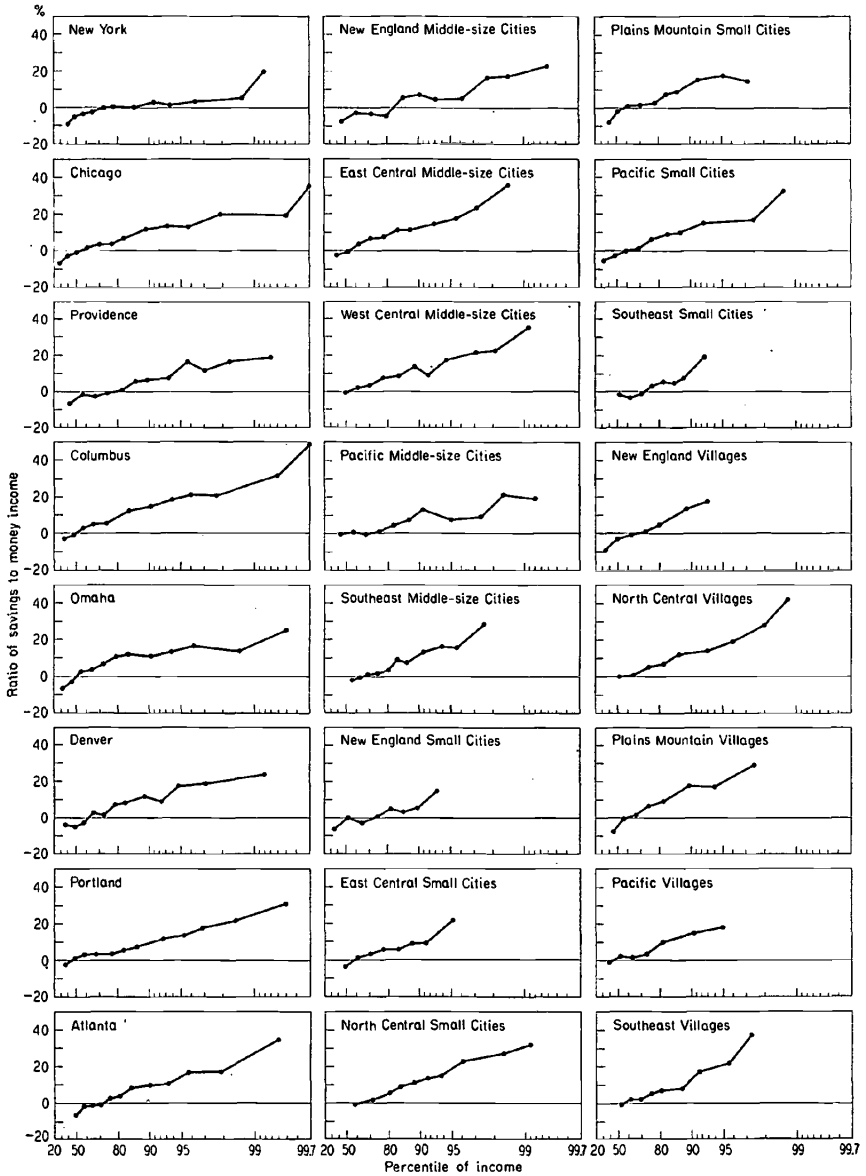


Horizontal scale, logarithmic

CHART 2 *(concl.)*

Savings of Nonfarm Families in Relation to Income and Income Distribution, 24 Groups of Communities 1935 – 1936

B. Percentage of Income Saved in Relation to Percentile of Income



Horizontal scale, log(100−x)

TABLE 2

Savings and Income Distribution
Portland, Oregon, and Denver, Colorado, 1935–1936

INCOME GROUP	INCOME DISTRIBUTION (cumulated)		SAVINGS AS A % OF MONEY INCOME	
	Portland	Denver	Portland	Denver
Under $1,000	100.0	100.0	deficit	
1,000– 1,250	62.9	62.9	–2.1	–4.1
1,250– 1,500	50.9	51.0	0.9	–5.2
1,500– 1,750	41.6	42.2	3.2	–3.0
1,750– 2,000	32.4	34.1	3.2	2.5
2,000– 2,250	23.9	27.3	3.3	1.5
2,250– 2,500	17.6	21.1	5.4	7.0
2,500– 3,000	13.2	17.0	7.4	8.3
3,000– 3,500	7.4	11.1	11.6	11.6
3,500– 4,000	4.7	7.6	13.3	9.1
4,000– 5,000	3.1	5.3	17.5	17.3
5,000– 7,500	1.5	2.9	21.7	18.3
7,500–10,000	.5	.8	30.6	23.7

Bureau of Labor Statistics, Washington 25, D. C.

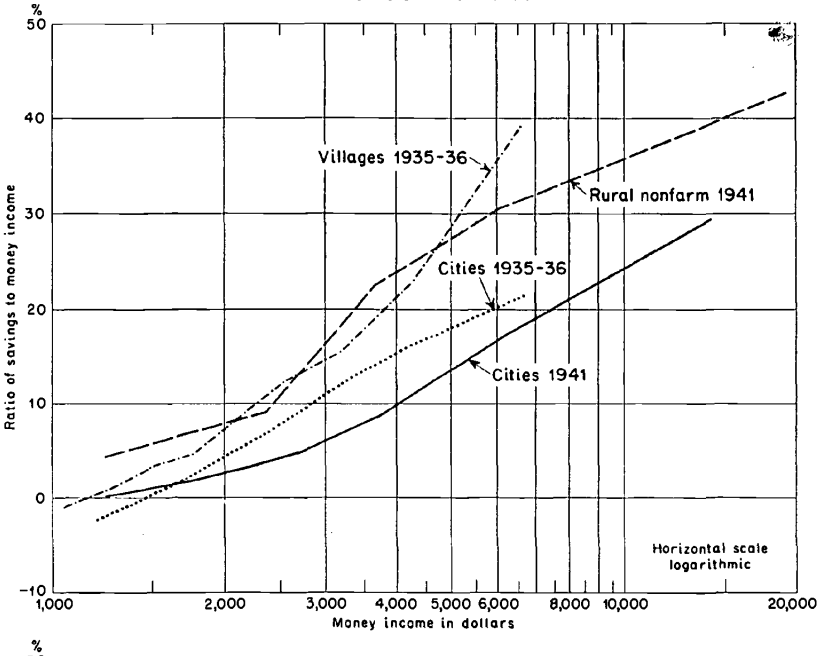
relatively greater error in the estimate of the income distribution. A comparison with data from other surveys in New York leads to the conclusion that this particular sample overstated the high consumption and low savings of New York families. In the Study of Money Disbursements of Wage Earners and Lower Salaried Clerical Workers made at about the same time, the savings in the income brackets above $3,000 were higher than in the sample for the Consumer Purchases Study. In the small sample of New York families included in the 1941 Study of Spending and Saving in Wartime, the savings were likewise higher at each income bracket than in the 1935–36 survey.

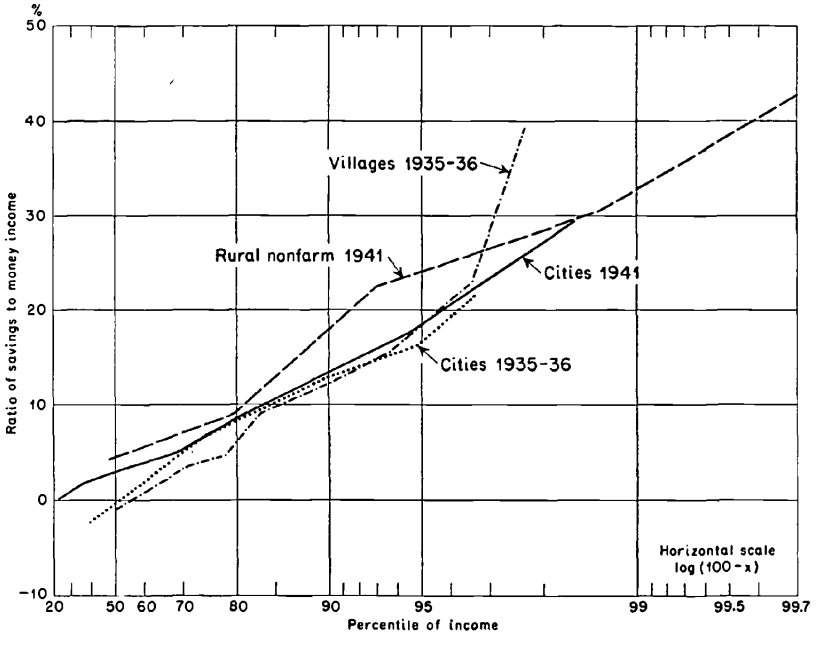
3 Nonfarm Families, 1935–1936 and 1941

Of particular interest is the apparent stability of the relation between savings as a percentage of income and the income distribution in the two periods, 1935–36 and 1941. As illustrated in Chart 3, the savings of urban families in 1941 were definitely lower than in 1935–36 in all income brackets above $1,500, and the savings of rural nonfarm families in both periods were higher than among urban families. When the percentages saved are associated with the percentiles (or fractions thereof) a large part of the difference is eliminated. The marked deviations may be ascribed, at least in part, to errors of estimate. The highest value in the 1935–36 village data, for example, was influenced by two very small samples in two regions. The variation at the lower end of the scale between the urban groups at the two

CHART 3

Savings of Nonfarm Families in Relation to Income and Income Distribution 1935-36 and 1941





dates is due to changes in the average size of family. In the income brackets under $2,000 the average size of family was substantially smaller in 1941 than in 1935–36. At those income levels the smaller families at both dates reported some savings while the larger families reported smaller savings or deficits.

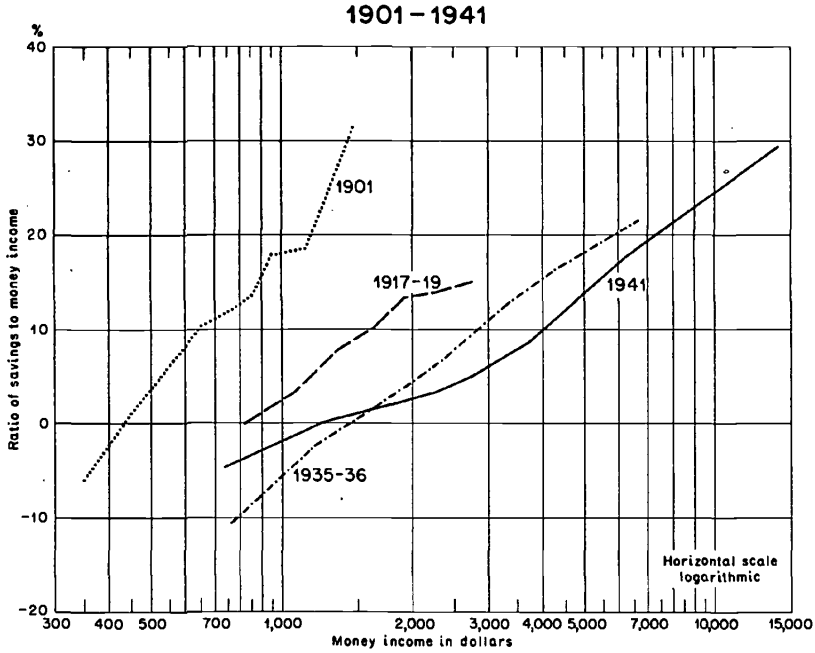
4 Urban Families, 1901–1941

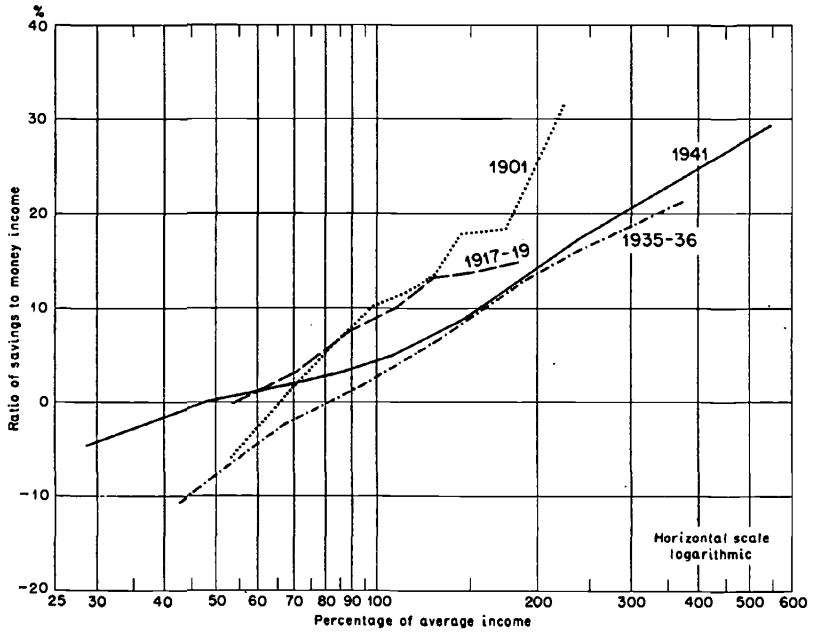
The data from earlier studies are not adequate enough to check the stability of this relation over time in any complete sense. The position of the savings pattern has apparently shifted considerably since 1901 (Chart 4). At the same time, the average income (in current dollars) of urban families has increased substantially. No information exists on which to base an estimate of changes in the income distribution. Accordingly, the only way of comparing the savings patterns in terms of the income distribution is to eliminate the effect of the differences in average income. Neither of the earlier studies provided an estimate of the mean income of the urban or even of the urban wage earner population. If, however, the average income of the families surveyed is used as a first approximation, and the income for each income group is expressed as a ratio to this average, the savings patterns are brought much closer together. Inasmuch as the mean income assumed for the two earlier sample surveys is probably an underestimate, this conversion probably overemphasizes the convergence. Furthermore, since the average size of family was greater in the 1901 and 1917–19 surveys than in the two later studies, the differences in savings patterns for families of the same size must be assumed greater than is suggested by the chart. It is possible to explain the level of savings in 1917–19 in terms of Liberty Bond purchases. The high level of savings in 1901 must be accepted as representing a fundamental change in family consumption and savings.

For this comparison it was necessary to adjust the published figures for the two earlier surveys to approximate the savings concept used in the recent studies. Premiums on life insurance and principal payments on mortgages on owner-occupied houses were formerly included in the family expenditure side of the account. Accordingly, it was necessary to add the average outlays for these purposes to the figures reported as savings for comparison with the recent surveys.

CHART 4

Savings of Urban Families in Relation to Income and Income Distribution 1901–1941





5 Farm Families, 1935–1936 and 1941

Savings among farm families are higher than among nonfarm families having the same current income or relative income position. The characteristic form of the savings pattern of the farm group is shown in Chart 5, which displays both data for all the area units of the 1935–36 study for which the samples included 600 families or more and data from the 1941 survey. The data on both income distribution and savings for the southern farm sections are for white operator families. Apparently, the distribution of income is a determinant of savings among farm as well as among nonfarm groups.

Inasmuch as the farm families are entirely in the entrepreneurial group, it is not unreasonable to assume that the year to year fluctuations in the income of the individual family are greater for farm than for nonfarm families. Expenditures and savings are without doubt dependent upon the expectation of a continuation of a given level of income. The high savings of farm families in the upper income brackets are probably due more to a behavior based upon experience with the wide fluctuations of agricultural returns than to any propensity to save in excess of the amounts characteristic of nonfarm families. In other words, were there data to show average savings in relation to average income for some period, say four or five years, the savings of farm families would not differ so much from the level characteristic of nonfarm families.

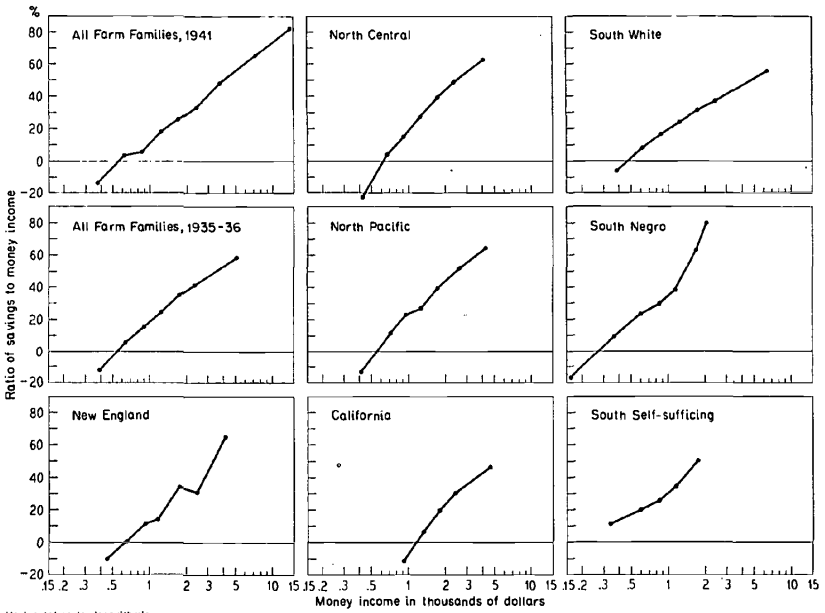
6 Negro Families, 1935–1936

At the same level of current income, Negro families save more than white (see note 5). The differences between the two groups in the level and distribution of income do not, however, account for the variation in the amount saved. In terms of relative position in the income distribution, white families save more than Negro (Chart 6). Although the samples are much too small to isolate any stability of savings patterns, a savings pattern characteristic of the Negro groups in relation to their relative incomes is suggested. The same percentile of income represents so much lower a dollar income among Negroes than among whites that a level of savings similar to that among white families of the same relative income would seem to involve almost

CHART 5

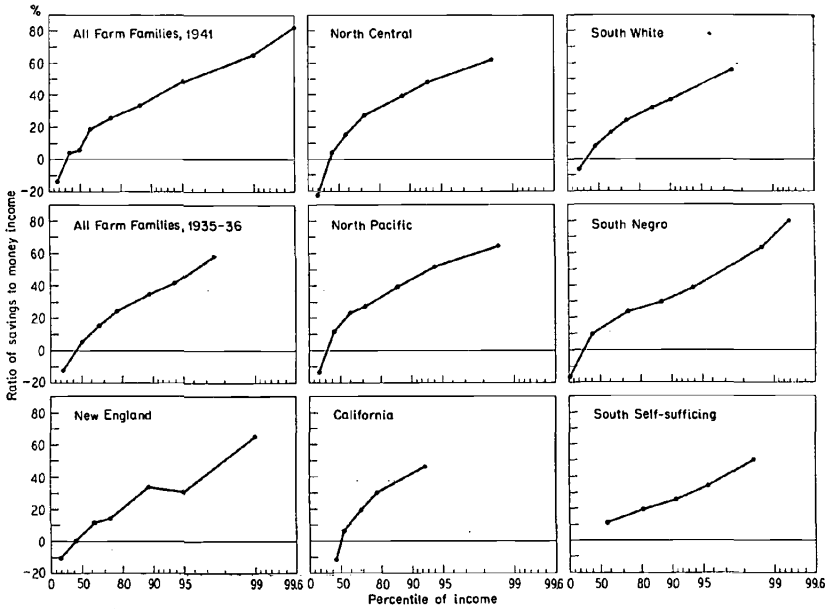
Savings of Farm Families in Relation to Income and Income Distribution 1935 – 1936

A. Percentage of Income Saved in Relation to Annual Money Income



Horizontal scale, logarithmic

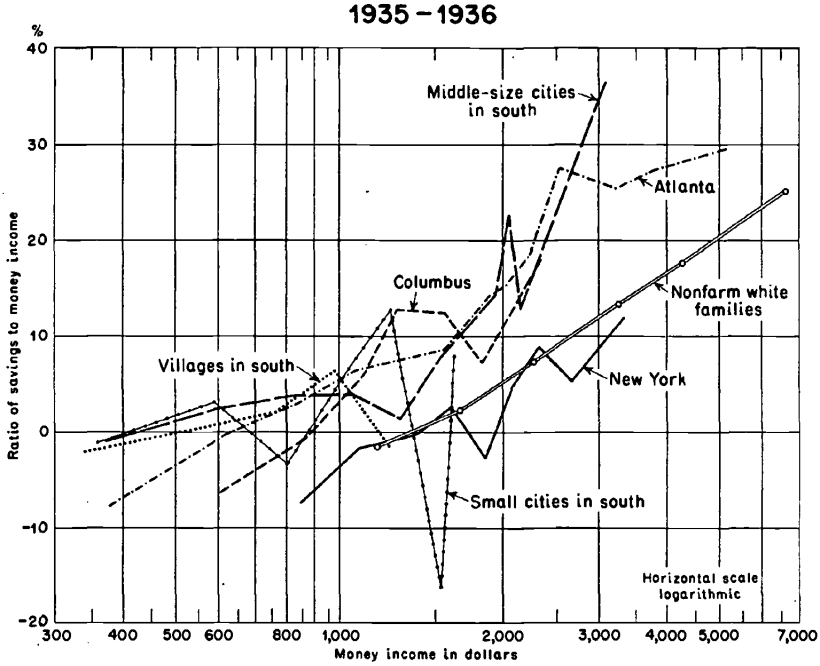
B. Percentage of Income Saved in Relation to Percentile of Income

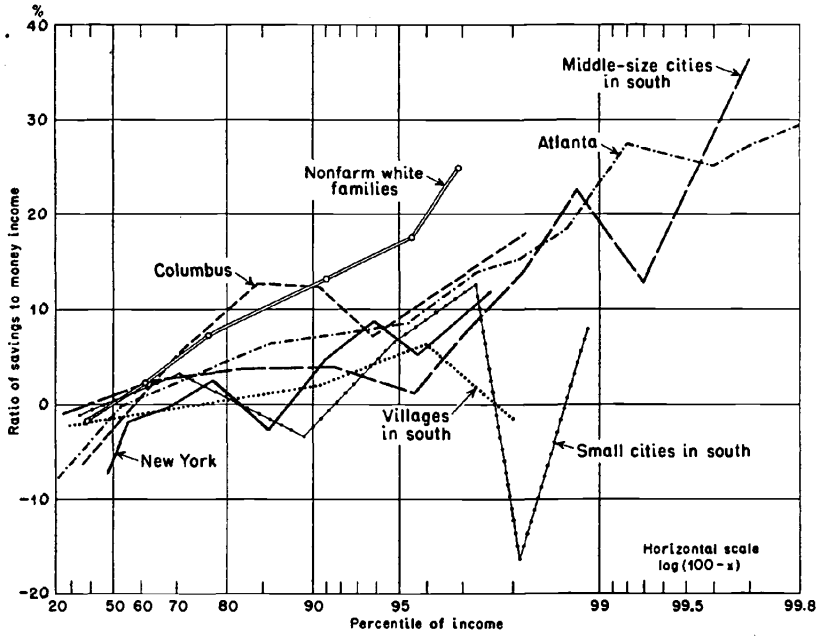


Horizontal scale, log(100-x)

CHART 6

Savings of Negro Families in Relation to Income and Income Distribution 1935–1936





the impossible. There is, however, a further interpretation that deserves consideration. While the white families as a community may be independent of the expenditure patterns of the Negroes, the converse is probably not true. The Negroes' mode of living is doubtless influenced by consumption patterns of the white community as well as by their own social world. Evidence on this question and many others awaits a more extensive analysis of existing data and the accumulation of more data designed to elicit the forces that determine the expenditures and savings of families.