

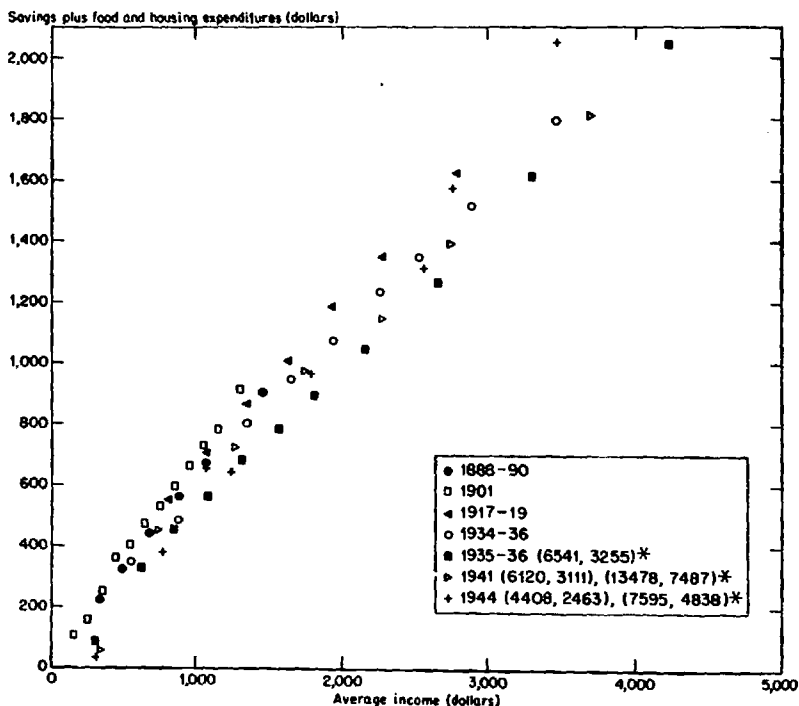
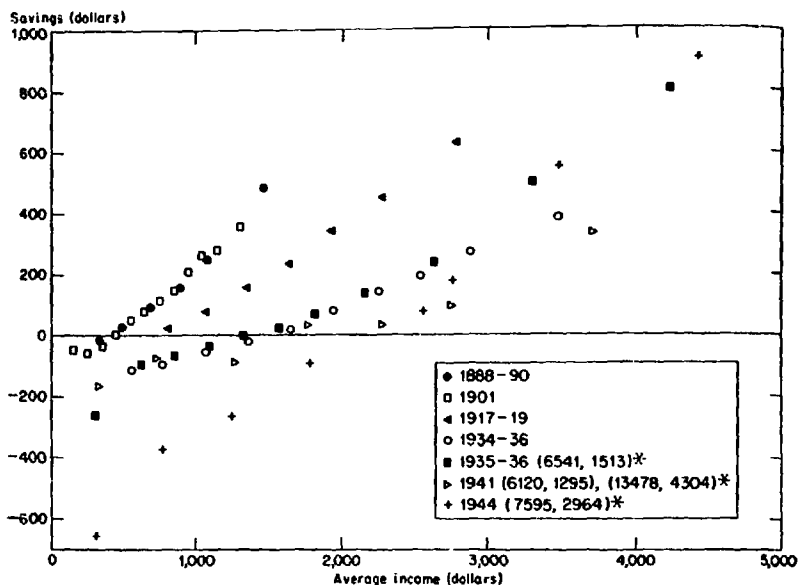
Table 4 (concl.)

AVERAGE INCOME	1888-90	1901	1917-19	1934-36	1935-36	1941	1944
SAVINGS PLUS FOOD AND HOUSING EXPENDITURES *							
\$150		\$102					
250		155					
305					\$82		\$31
313							
329						\$63	
335	\$221						
350		243					
450		360					
491	322						
550		402					
552				\$349			
622					328		
650		466					
680	440					452	
736							
750		525					
776							378
777				486			
813			\$550				
850		588					
856					456		
884	563						
950		662					
1,050		726					
1,065				655			
1,068	671						
1,075			706				
1,090					563		
1,150		781					
1,243						723	642
1,268							
1,300		908					
1,324					680		
1,344			865				
1,352				805			
1,459	903						
1,566					782		
1,632			1,011				
1,641				947			
1,759						974	
1,779							967
1,806					893		
1,925			1,184				
1,937				1,074			
2,150					1,045		
2,252				1,235			
2,272			1,348			1,147	
2,529				1,348			
2,559							1,313
2,625					1,264		
2,744						1,393	
2,757							1,571
2,790			1,624				
2,881				1,515			
3,300					1,613		
3,468				1,797			
3,480							2,054
3,702						1,810	
4,224					2,044		
4,408							2,463
6,120						3,111	
6,541					3,255		
7,595							4,838
13,478						7,487	

Note to Table 4 on page 127.

Chart 2

Relation of Savings and Savings Plus Food and Housing Expenditures to Average Income, Nonfarm Families, 1888-1944



* Figures in parentheses represent points not plotted because they fall beyond the range of the chart.
Source: Table 4.

Table 5

Savings and Food and Housing Expenditures
Farm Families, 1935-36 and 1941

Average Income	Average Savings		Savings plus Food & Housing Expenditures	
	1935-36	1941	1935-36	1941
\$137		-\$171		-\$34
178	-\$118		\$7	
377		61		136
394	-37		136	
628		9		285
643	54		272	
868		42		392
901	164		415	
1,226		296		632
1,236	336		627	
1,701		569		943
1,734	744		983	
2,362	1,023		1,441	
2,439		779		1,378
3,776		1,885		2,426
5,095	3,057		3,595	

if they are confined to the cost of food and housing, price explains only part of the variation in the general community income level and thus only the part of the variation in food and housing expenditures that is associated with the community income position.¹³

Home production of food and fuel for home consumption and the occupancy of owned dwellings tend to be inversely correlated with expenditures on food and housing and also with the level of community incomes at a given time. Thus savings at a given income bracket are larger when food is produced for home use and families tend to own their homes. This factor is clearly a partial explanation of the high farm savings in relation to non-farm savings at the same level of money income.

Even though price and home production are important variables, the changing standards of consumption that appear to be almost inevitably associated with the community income level may in the long run prove

¹³ There have been three studies on which to base this conclusion: *Cost of Living in American Towns* (Board of Trade, Great Britain, 1909); *Intercity Differences in Costs of Living* (Works Progress Administration, Division of Social Research, Monograph XII, March 1935); and 'City Worker's Family Budget', *Monthly Labor Review*, February 1948.

NOTE TO TABLE 4

* The data for average savings were standardized for family size, but the sum of savings and expenditures for food and housing were not adjusted for variation in size of family. An unpublished study indicates that there is no significant difference in this sum between families of different size. The correlation of family size with outlays appears in the distribution of this total.

to be the most important factor in explaining the division of the total allocation between food and housing expenditures and savings. The detailed information on food and housing consumption available from surveys offers convincing evidence of the changing standards of the middle and low income groups in food consumption and type of housing during the sixty years. Among communities at the same time the housing and food standards of the same income bracket clearly vary with the general income level of the community in terms of such indicators as meat, vegetable, and milk consumption, and plumbing, lighting, and heating facilities.

I IMPLIED AGGREGATE RELATIONSHIPS

The effects of the characteristic changes in the savings pattern, relating family savings to family income, depend upon the distribution of the population by locality and income class. The number of families living in communities of each type (low to high income), and within communities the number of families in each income bracket, determine the importance of the variations in family savings pattern for study of the aggregate data. Variations that might be very interesting from the viewpoint of family behavior might not be significant in their effect on the total if the population concerned was relatively small.

Propositions (a)–(d), which have been examined in terms of the empirical data on family savings, imply similar relationships in the aggregate data which must be rephrased to take account of the joint distribution of families by the size of their incomes and the general level of community income. The manner in which the normal savings pattern specified in the hypothesis would be reflected in the movement of the aggregates would be exceedingly responsive to the changes in this joint distribution of the population by community and family income. For if the simplified expression for the relationships (1) and (2)

$$(6) \quad \begin{aligned} y &= ic \\ s &= x - y \end{aligned}$$

is used to represent the normal relationship, where x , y , and s represent, as before, income, expenditures, and savings of a given income bracket, and where i represents a function of the community income, the aggregates for all communities and all income brackets become $Y = N \bar{i} \bar{c} + N r_{ic} \sigma_i \sigma_c$, $S = I - Y$, where I , Y , and S are aggregate income, aggregate expenditures, and aggregate savings, \bar{i} the average value of the function i , \bar{c} the average value of the function c , r the correlation coefficient between the two functions, and σ_i and σ_c are their standard deviations.

If i and c are nonlinear functions, as was assumed above, the aggregate functions would not appear linear unless the second term for Y is of a magnitude to affect this aggregate. The second term depends on the correlation between family and community income which cannot be estimated with any accuracy for want of the necessary information on income size distributions at different dates. A rough guess based on the size distribution for 1935-36 would place this correlation near 0.2.¹⁴ If the correlation were even much lower, this term, which also depends on the two standard deviations and the number of consuming units, would surely be significant in determining the magnitude of Y . This result may explain in part the paradox of nonlinear patterns of family expenditures and savings corresponding to linear aggregate consumption and savings functions.

Variations from the normal form interpreted in propositions (c) and (d), reflected in the aggregates, depend on a joint distribution in three or more variables, for the former level of community income determining these variations probably differs substantially from community to community. Summation would introduce several correlation coefficients and standard deviations, some of which would surely be sufficiently large to affect the totals.

The essential data on income distribution by community and date are virtually nonexistent. Thus to estimate the possible effects of changes in these distributions the investigator is forced to work only with aggregates in terms of an analytic model that recognizes the possibility of changes in the distributions. Perhaps one effect is to produce an apparent linearity in the aggregate savings functions during periods of similar economic conditions, but there is a serious possibility that such linear forms may be altered substantially by some reasonably small modifications in these distributions of the population.

The aggregate functions relating savings to income, according to this analysis, would differ substantially with economic circumstances. The savings function would have a steep slope at the beginning of an upward movement in income, especially if the recent increase in income was substantial. In subsequent periods of increases in income the slope might diminish almost to zero, a horizontal line. Periods of declining income would produce similar savings functions at lower levels. Thus from this

¹⁴ Though this may seem a low figure in view of the wide dispersion in average incomes among communities at a given time, it may actually be much too high. It results from the fact that the majority of the population lived at that time in communities with fairly similar income distributions.

study of the family savings pattern, at least four types of aggregate savings functions can be expected to appear in the aggregate data and variations on these types doubtless emerge as a result of the unknown characteristics of the distributions of income among families and communities at different times.