

UNITED STATES DEPARTMENT OF LABOR
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Income and Spending and Saving of City Families in Wartime

Prepared by

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Letter of Transmittal

UNITED STATES DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, D. C., September 15, 1943.

The SECRETARY OF LABOR:

I have the honor to transmit herewith a report on income and spending and saving of city families in wartime. This report was prepared in the Cost of Living Division, Faith M. Williams, Chief, by Alice C. Hanson, Jerome Cornfield, and Lenore A. Epstein.

A. F. HINRICHES, *Acting Commissioner.*

Hon. FRANCES PERKINS,
Secretary of Labor.

Bulletin No. 724 of the
United States Bureau of Labor Statistics

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INCOME AND SPENDING AND SAVING OF CITY FAMILIES IN WARTIME

Summary

The present war has not brought boom spending and "silk-shirt" prosperity to the average city consumer¹ in the United States. Although the income of city consumers rose over 7 percent between the year 1941 and the first quarter of 1942, their average expenditures for current consumption increased less than 2 percent. At the same time living costs went up 7.5 percent. Thus, in the first 3 months after the attack on Pearl Harbor, American city consumers were buying a smaller quantity of goods and services.

The conversion of American industry to war production was reflected in increases in money income of 5 percent or more between the two periods, for nearly half the urban consumers in the United States. For this group, income increased enough to offset the increase of 7.5 percent in living costs.² Over one-fifth had increases that amounted to 25 percent or more. On the other hand, priority unemployment, business losses, and other factors caused decreases in income of 5 percent or more for another fifth of the consumers.

One-half of the city consumers had annual cash incomes below \$1,857 in 1941 as compared with \$1,982 in 1942. Single persons, comprising over one-sixth of all consumers, were much more heavily concentrated at the low income levels than were families of two or more. In 1942, 54 percent of the single persons and 15 percent of the families had incomes at an annual rate of less than \$1,000.

Relatively full employment and the higher wages meant great improvement in incomes as compared with 1935-36. In that year half the urban families of two or more persons had money incomes below \$1,295 as compared with \$2,215 in 1942. The proportion of families having cash incomes below \$1,000 was more than twice as large in the mid-thirties as in 1941 and the winter of 1942. The average increase in income more than balanced the 15-percent rise in living costs from 1935-36 to 1942.

The lower the income level in 1941, the larger was the proportion of consumers whose incomes rose 25 percent or more between 1941 and 1942. This was to be expected, because part-time employment or unemployment for some members of the family was a frequent cause

¹ The term "consumer" is used to include both families of two or more persons and single consumers. Nearly five-sixths of the consumers were families of two or more. In this article the terms "single persons" and "single consumers" are used synonymously.

² Based on a comparison of the Bureau's index of the cost of goods purchased by wage earners and lower-salaried workers in the United States averaged for the year 1941 and for the first quarter of 1942.

of low income in 1941. Full-time employment in 1942 for such persons would result in a large percentage increase in family income. Comparatively few of the high-income families in 1941 had unemployment, and at their income levels it is not common to have an opportunity to move to a job that within the year pays 25 percent more than the job previously held.

Supplementary income in the form of goods and services received as pay, as gift, or as relief was relatively important at the low income levels. The occupancy value of owned homes also represented additional income to a large number of families, especially at the high income levels. Supplementary income in 1942 was important enough, when added to money income, to shift over one-fifth of all families and single consumers living in cities into a higher income class.

Savings of the average city consumer were 70 percent higher in the first 3 months of 1942 than in the preceding year. In 1942, 11 percent of total money income went into savings as compared with 7 percent in 1941. Consumers whose incomes did not change saved half again as much in 1942 as they saved in an average quarter of 1941. Those with substantially higher incomes saved very much more than in the preceding year. Those who had suffered reductions in income ran into debt in the later period, but they were relatively few in number. The general increase in savings was so large that it represented over two-thirds of the increase in total consumer incomes. Increases in assets and decreases in liabilities made up these increased savings, as well as income taxes paid in advance of due date. War bond and stamp purchases formed a large part of the savings.

For low-income consumers, the winter of 1942 brought a large increase in debt. Increased living costs explain in part their greater difficulty in making ends meet. Thus, fixed-income consumers in the classes below \$1,500 spent 7 percent more than in 1941. In addition there was a large number to whom 1942 meant sharply decreased incomes. Food, housing, and medical care accounted for practically the entire rise in expenditures for these groups. In contrast, higher-income city consumers (those with incomes above \$1,500) spent less for consumption and saved more in 1942 than those with incomes of that amount in 1941.

With new cars and tires rationed, expenditures of the average city consumer for buying and running automobiles were much lower in 1942 than in 1941. Outlays for household furnishings and durable equipment such as stoves and refrigerators were also lower. The only expenditures of the average consumer that showed notable increases in average amount between 1941 and 1942 were for food, fuel, and medical care. Families usually spend more for medical care and fuel in winter time. Food prices, however, had advanced 11 percent between 1941 and the first quarter of 1942, while expenditures for food went up only 5 percent. This means that city consumers were buying less food or the cheaper foods in the first 3 months after the declaration of war.

These findings come from the Survey of Family Spending and Saving in Wartime conducted by the Bureau of Labor Statistics among a cross section³ of all city consumers—families and single persons. It was paralleled by a survey of rural consumers by the Bureau of Home

³ For a combined report for the Nation's families, see Bureau of Labor Statistics Bull. No. 723 and subsequent reports.

Economics of the United States Department of Agriculture. These form the first Nation-wide study of incomes and expenditures since the Study of Consumer Purchases covering 1935-36. The consumers were interviewed in their homes by trained field agents, using a detailed schedule that covered sources of income, amounts spent for food, clothing, housing, transportation, and all other items entering into current family living, as well as net change in family assets and liabilities. From most consumer units, the information was obtained for both the year 1941 and the first quarter of 1942.

Income of All Consumer Units

MONEY INCOME

Half the families and single persons living in cities had money incomes at the annual rate of \$1,982 in the first 3 months of 1942 as compared with \$1,857 or less in 1941 (table 1 and chart 1). In both periods, 8 percent of all urban families and single persons had cash incomes below \$500. Annual incomes of \$3,000 or more, however, were reported by 23 percent of the families in 1942 as compared with only 19 percent in the preceding year.

TABLE 1.—*Percentage Distribution of City Families and Single Persons by Money Income, 12 Months of 1941 and First 3 Months of 1942*

Annual money income class ¹	12 months of 1941			First 3 months of 1942 (annual rate)		
	Families plus single persons	Single persons ²	Families of 2 or more persons ³	Families plus single persons	Single persons ²	Families of 2 or more persons ³
Under \$500.....	8	29	4	8	27	4
\$500 and under \$1,000.....	15	34	11	14	27	11
\$1,000 and under \$1,500.....	15	19	14	14	21	12
\$1,500 and under \$2,000.....	16	9	18	15	11	16
\$2,000 and under \$2,500.....	15	5	17	15	9	17
\$2,500 and under \$3,000.....	12	3	14	11	4	13
\$3,000 and under \$5,000.....	14	1	16	17	1	20
\$5,000 and over.....	5	(*)	6	6	(*)	7
Total.....	100	100	100	100	100	100
Median income	\$1,857	\$817	\$2,083	\$1,982	\$918	\$2,215

¹ For 1942, annual rate of money income was based on first 3 months.

² A single consumer, as defined in this survey, is a person who does not pool his income and expenditures with anyone else. He may be married or single.

³ A family of 2 or more persons, as defined in this survey, consists of persons who pool their incomes and expenditures. They need not be related nor do they necessarily share the same household although such instances are infrequent.

⁴ Less than half of 1 percent.

More significant is the fact that decreases of income were more common among the group with incomes of more than \$3,000 in 1941 than among those with lower incomes. It is to be noted that at all income levels below \$3,000 about 1 out of 5 consumers suffered at least a 5-percent loss of income from 1941 to 1942. Above this level, however, nearly 1 out of 3 faced such a decline and 1 out of 10 a decrease of more than 25 percent. This may not mean that there was more job loss among the higher-income group, but probably does mean that it is harder for persons displaced at the \$3,000 income level to find employment producing equivalent income than for those displaced at the \$1,500 level.

TABLE 2.—*Comparison of Money Incomes of City Families and Single Persons, in 12 Months of 1941 and First 3 Months of 1942, by 1941 Money Income Class*

Annual money income class in 1941	Percent of families reporting annual rate ¹ of 1942 income					
	Total	Higher than in 1941 by—		Within 5 percent of 1941 income	Lower than in 1941 by—	
		25 percent or more	5 to 25 percent		5 to 25 percent	25 percent or more
All incomes.....	100	22	27	29	14	8
Under \$1,000.....	100	29	24	27	10	10
\$1,000 and under \$2,000.....	100	25	29	27	11	8
\$2,000 and under \$3,000.....	100	18	30	31	15	6
\$3,000 and over.....	100	17	21	31	21	10

¹ For 1942, annual rate was based on first 3 months.

As a result of income shifts, some of the \$1,000 consumers in 1941 became \$1,500 consumers; some of those in the \$1,500 income class in 1941 fell in the \$1,000 class in 1942 (table 4). It is well, therefore, to consider what the income status in 1941 was for families and single persons now making \$1,000 or \$2,000 or \$3,000, as the case may be (table 3). It will be seen, for example, that nearly 1 in every 3 with an income of less than \$1,000 in 1942 had suffered a decline of 5 percent or more in income. On the other hand only about 1 in every 8 of those with \$3,000 or more in 1942 had had an income reduction of 5 percent or more. Nearly 2 out of 3 of the consumers with \$3,000 or more in 1942 had had an increase of income, while only 2 out of 5 of those with incomes of less than \$1,000 were better off in 1942 than in 1941. Thus, it is not to be assumed from the discussion of table 2 that the average consumer at low income levels is better off in 1942 than in 1941.⁴

TABLE 3.—*Comparison of Money Incomes of City Families and Single Persons, in 12 Months of 1941 and First 3 Months of 1942, by 1942 Money Income Class*

Annual money income class in 1942	Percent of families reporting annual rate of 1942 income					
	Total	Higher than in 1941 by—		Within 5 percent of 1941 income	Lower than in 1941 by—	
		25 per- cent or more	5 to 25 percent		5 to 25 percent	25 per- cent or more
All incomes.....	100	22	27	29	14	8
Under \$1,000.....	100	15	23	30	14	18
\$1,000 and under \$2,000.....	100	21	27	29	15	8
\$2,000 and under \$3,000.....	100	21	28	33	14	4
\$3,000 and over.....	100	33	30	24	10	3

¹ For 1942, annual rate was based on first 3 months.

⁴ The distinction between tables 2 and 3 is of extreme importance in considering a tax program. There is presumably a larger taxpaying capacity in a family that customarily had an income of \$1,200 but now has an income of \$1,500 than in a family that has characteristically had about \$1,500 and still has. Table 2 shows that about half the families had substantially more income in 1942 than in 1941 and that increases were especially frequent among families that had had less than \$2,000 income. Table 3 indicates that the group with less than \$1,000 consists of about equal numbers of families with more income than in 1941, with the same income, and with less income. In other words, as a group its taxpaying capacity is about the same as in 1941. On the other hand, the taxpaying capacity of the group with incomes of \$2,000 to \$3,000 in 1942 is larger than in 1941 because it contains 5 families with larger incomes than in 1941 for every 2 whose incomes are smaller.

TABLE 4.—Comparison of Money-Income Distribution of City Families and Single Persons in 12 Months of 1941 and First 3 Months of 1942

Annual money income class in 1941	Total	Annual money income class in 1942 (based on first 3 months)					
		Under \$500	\$500-\$1,000	\$1,000-\$1,500	\$1,500-\$2,000	\$2,000-\$3,000	\$3,000 and over
Under \$500.....	100	78	16	5	(1)	1	(1)
\$500 and under \$1,000.....	100	9	66	18	5	2	(1)
\$1,000 and under \$1,500.....	100	2	10	52	27	8	1
\$1,500 and under \$2,000.....	100	1	1	11	10	35	2
\$2,000 and under \$3,000.....	100	(1)	1	2	7	63	27
\$3,000 and over.....	100	(1)	(1)	(1)	(1)	13	85

¹ Less than half of 1 percent.**TOTAL INCOME (INCLUDING INCOME IN KIND)**

In addition to cash incomes, many families and single persons received supplementary income in the form of home-produced food and food, rent, clothing, or household furnishings as pay, as gift, or from a relief agency. In addition, home owners were credited with income representing the occupancy value of their homes, that is, the difference between the market rental value of the dwelling and the actual expenses incurred for taxes, repairs, insurance, and interest on mortgages.

Income in kind was particularly important at the low-income levels, comprising about half again as much as money income, on the average, for families and single persons with money incomes below \$500, and over one-sixth as much for those in the next higher income class (table 5). Domestic servants, janitors, institutional and other employees who customarily receive food or lodging as pay, and relief recipients are concentrated in these income groups. At the upper income levels noncash income, consisting principally of the occupancy value of owned homes, averaged larger in amount but was relatively unimportant in relation to cash income.

TABLE 5.—Average Money and Other Income of City Families and Single Persons by Money Income Class, 12 Months of 1941 and First 3 Months of 1942

Annual money income class ¹	12 months of 1941			First 3 months of 1942		
	Average money income	Average value of goods and services received without direct expense	Average total ² income	Average money income	Average value of goods and services received without direct expense	Average total ² income
All incomes ³	\$2,188	\$150	\$2,347	\$587	\$40	\$627
Under \$500.....	307	144	451	75	40	115
\$500 and under \$1,000.....	743	134	877	182	32	214
\$1,000 and under \$1,500.....	1,246	123	1,369	312	33	345
\$1,500 and under \$2,000.....	1,750	137	1,887	436	33	469
\$2,000 and under \$2,500.....	2,240	158	2,398	556	35	591
\$2,500 and under \$3,000.....	2,742	175	2,917	685	38	723
\$3,000 and under \$5,000.....	3,732	202	3,934	932	47	979
\$5,000 and under \$10,000.....	6,208	247	6,455	1,615	77	1,692

¹ For 1942, annual rate of money income was based on first 3 months.² Money income plus other income.³ Includes families with incomes of \$10,000 and over.

When income in kind is added to the money income of each consumer unit reporting some noncash income in 1942, 22 percent fall into a higher income class than when money income alone is considered. Some at each level move into a higher class (table 6 as compared with table 1).

TABLE 6.—*Percentage Distribution of City Families and Single Persons by Total Income, 12 Months of 1941 and First 3 Months of 1942*

Annual total income class:	12 months of 1941	First 3 months of 1942 (an- nual rate)
Under \$500.....	6	5
\$500 and under \$1,000.....	14	14
\$1,000 and under \$1,500.....	15	13
\$1,500 and under \$2,000.....	16	15
\$2,000 and under \$2,500.....	14	15
\$2,500 and under \$3,000.....	12	11
\$3,000 and under \$5,000.....	17	20
\$5,000 and over.....	6	7
Total.....	100	100
Median income.....	\$1,960	\$2,108

¹ Money plus income in kind.

² For 1942, annual rate of income was based on first 3 months.

Income of Families and Single Persons

MONEY INCOME

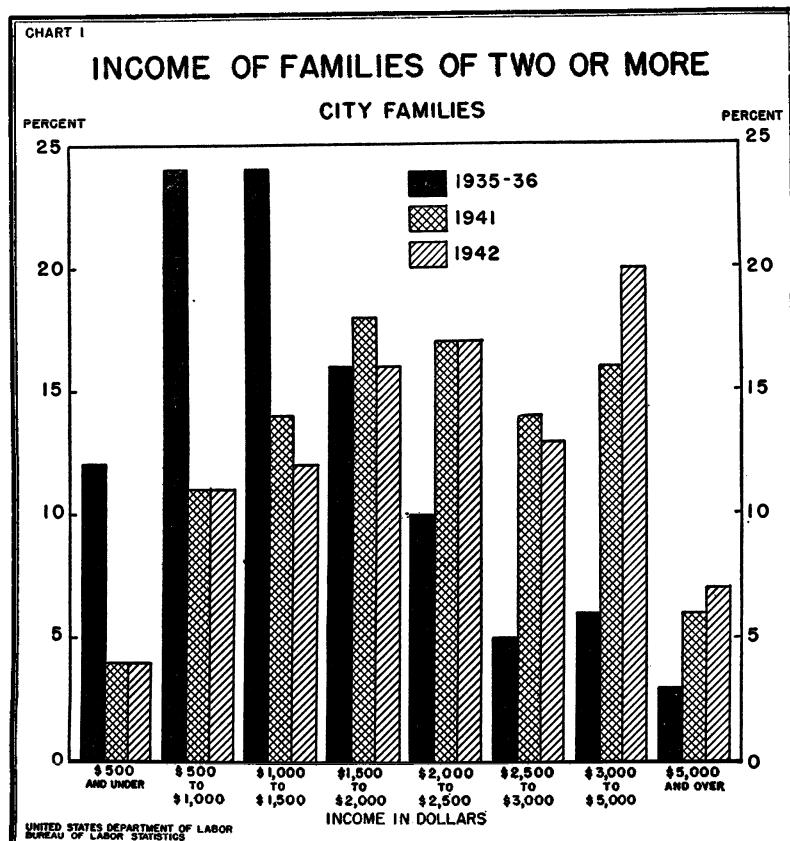
Single persons constituted over one-sixth of all consumer units living in cities in 1941 and the winter of 1942. They were much more heavily concentrated in the low-income classes than were families of two or more. However, low-income single persons appear to have benefited more than low-income families by the conversion of industry to a war basis.

In both periods, 15 percent of the families of two or more had money incomes below \$1,000 per year (table 1), and approximately the same proportion (29 and 27 percent) of single persons had incomes of less than \$500 in each period. Incomes of \$500 to \$1,000, however, were reported by 34 percent of the single persons in 1941 as compared with 27 percent in 1942.

Half the city families had money incomes at the rate of \$2,215 per year or more in 1942 as compared with \$2,083 in 1941. The median income of the single persons increased from \$817 in 1941 to \$918 in 1942.

Changes as compared with 1935-36.—Striking as are the changes in income between 1941 and the first quarter of 1942, the improvement between 1935-36 and the more recent periods is much more impressive. In the period immediately following the depression half of the urban families of two or more are estimated to have had cash incomes below \$1,295, as compared with the median annual income of \$2,083 in 1941 and \$2,215 in 1942. These figures must be compared, however, with a change in living costs of 7.1 percent from 1935-36 to 1941 and 15.2 percent from the former period to the first quarter of 1942.⁵ Under

⁵ Based on a comparison of the Bureau's index of the cost of goods purchased by wage earners and lower-salaried workers in the United States averaged for the 12 months, July 1935 through June 1936, for the 12 months of 1941, and for the first 3 months of 1942.



conditions of relatively full employment at higher wages, 15 percent of all families of two or more had cash incomes below \$1,000 whereas in the mid-thirties 36 percent had less than that amount. At the other extreme, the 22 percent and the 27 percent having incomes of \$3,000 or more in 1941 and 1942, respectively, are in contrast to the 9 percent with such incomes in 1935-36 (table 7).

TABLE 7.—*Percentage Distribution of City Families of 2 or More Persons by Money Income,¹ 12 Months, 1935-36*

Annual money income class in 1935-36	Families of 2 or more persons
Under \$500.....	12
\$500 and under \$1,000.....	24
\$1,000 and under \$1,500.....	24
\$1,500 and under \$2,000.....	16
\$2,000 and under \$2,500.....	10
\$2,500 and under \$3,000.....	5
\$3,000 and under \$5,000.....	6
\$5,000 and over.....	3

¹ Based on data in the National Resources Planning Board publication: Family Expenditures in the United States (tables 20, 87, and 182). The total income distribution was adjusted to a money-income basis by deducting imputed income of home owners.

TOTAL INCOME

Supplementary income in kind appears to be about as important for families as for single persons. Over one-fifth of each group moved into a higher income class in 1942 when classified by total income rather than money income. Low-income single persons are likely to work as domestic servants and institutional employees and frequently receive food and rent as pay. Families of two or more are more likely than single persons to receive relief. Also, they much more frequently own their homes.

Spending and Saving, All Incomes⁶

Savings by city consumers were about 70 percent higher in the first 3 months of 1942 than in 1941 (table 8), and formed over 11 percent of money income in the 3-month period as compared with 7 percent in the preceding year. Consumers whose incomes did not change saved half again as much as they saved in an average quarter of 1941. Those whose incomes had increased substantially saved an exceptionally large amount in 1942—57 percent of their increase in income. Families and single persons whose incomes were substantially lower in 1942 had large deficits in that period, but they were small in number as compared with those with higher incomes. The general increase in savings was so large that it represented two-thirds of the increase in total city consumer incomes. War bond and stamp purchases formed a large part of these new savings.

The savings figures are based on the consumers' own statements about net change in each class of their assets and liabilities during the year and the quarter, respectively. Included as savings are reductions in past debts of all kinds, as well as additions to present holdings in the form of cash, real estate, stocks or bonds, or other securities. Payments of life-insurance premiums are treated as a part of savings, as are payments on principal of mortgage or improvements on homes or other real estate owned by the family, and contributions for old-age and unemployment insurance paid by the individual. Savings also include advance payments on Federal income tax (that is amounts actually paid in excess of the one-fourth of the year's tax on 1941 income which was due during the first quarter). To the extent that families were cutting down on their consumption during the first quarter in order to meet their advance tax payments, the level of savings for the remainder of the year may be expected to be somewhat lower. Deficits include increases in balances owing on installment and other credit accounts, in amounts owed to banks, loan companies, etc., amounts due in taxes, and net amounts received from sale of holdings.

Personal-tax payments, averaging \$22 for the entire year, took only 1 percent of the cash income of the average city consumer in 1941. In the first 3 months of 1942 such taxes amounted to \$16 (\$64 per year), or 2.7 percent of income. Federal and State income taxes,

⁶ Averages for all families do not represent the saving or consumption of "typical" Americans, or of any identifiable group, since they are merely an arithmetic average of the spending of the rich and the poor as well as those in the middle-income classes and of single consumers as well as families. Although the average spending of each income class is weighted by the proportion of all consumers in that class, in arriving at the general average, the large amounts spent and saved by high-income consumers give each of these few consumers a much heavier influence upon the average amounts than each of the many consumers at the lower end of the income scale. However, such general averages provide a useful cross-section picture for the particular period to which they refer.

poll taxes, and personal-property taxes, due in January, February, or March, make up these average figures. Taxes on real estate and on automobiles and excise and sales taxes are not included in these figures but are combined with the items to which they apply.

TABLE 8.—*Average Money Income, Expenditures, and Savings of City Families and Single Persons During 12 Months of 1941 and First 3 Months of 1942*

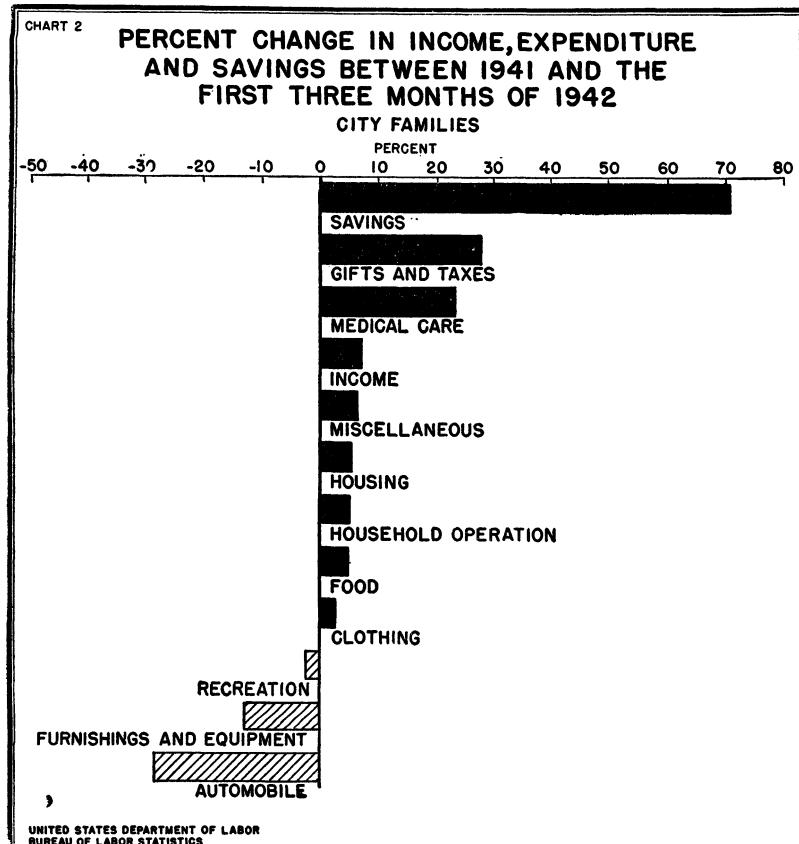
Item	Average amount			Percent of money income ¹	
	1941, 12 months	1942		1941	1942
		First 3 months	Annual rate ²		
Money income.....	\$2,188	\$587	\$2,348	100.0	100.0
Expenditures for current consumption.....	1,938	492	1,968	88.6	83.7
Food.....	612	161	644	28.0	27.5
Housing, fuel, light, and refrigeration.....	363	96	384	16.6	16.4
Household operation.....	65	25	100	4.3	4.2
Furnishings and equipment.....	101	22	88	4.6	3.7
Clothing.....	230	59	236	10.5	10.1
Automobiles.....	184	33	132	8.4	5.7
Other transportation.....	43	11	44	2.0	1.8
Personal care.....	43	11	44	2.0	1.9
Medical care.....	91	28	112	4.1	4.7
Recreation.....	82	20	80	3.8	3.4
Tobacco.....	42	11	44	1.9	1.8
Reading.....	20	5	20	.9	.9
Education.....	17	5	20	.8	.8
Other.....	15	5	20	.7	.8
Gifts and contributions.....	97	22	88	4.4	3.8
Personal taxes.....	22	16	64	1.0	2.7
Savings.....	157	67	268	7.2	11.3

¹ Annual figures were based on first 3 months of 1942.

² The difference between income and expenditures plus savings is accounted for by minor discrepancies in figures furnished by families and in a few instances by nonincome funds, such as inheritance received by families.

Gifts to persons and contributions to relatives and to welfare, religious, and war-relief organizations were over four times as important as tax payments in the case of the average city consumer in 1941. In the winter of 1942, however, such gifts and contributions amounted to only slightly more than tax payments and, when estimated on an annual rate, were somewhat smaller than in 1941. This undoubtedly reflects the fact that personal gifts are largely concentrated at the Christmas season and that community-chest drives in most cities are held in the fall.

The only expenditures of the average consumer that showed notable increases in average amount between 1941 and 1942 were for food, fuel, and medical care. Families usually spend more for medical care and fuel in winter time. Food prices, however, had advanced 11 percent between 1941 and the first quarter of 1942, whereas expenditures for food went up only 5 percent. This means that families and single persons were buying less food or cheaper food in 1942 than in 1941. With new cars and tires rationed, expenditures for buying and running automobiles were much lower in 1942 than in 1941. Outlays for household furnishings and durable equipment, such as stoves and refrigerators, were also lower.



Spending and Saving, by Income Level

When savings of consumers at different income levels (table 9) are compared, deficits at the lower income levels give way to progressively larger savings at the higher income levels. This was true both in 1941 and the first part of 1942, although in the later period both extremes were accentuated; deficits at low levels were greater and savings at high levels were greater.

The savings figures at every income level are in themselves averages made up of some families and single persons with net savings and others with net deficits. Thus, even at the under-\$500 income level, some consumers managed substantial savings, whereas others with incomes as high as \$10,000 ended the year or the quarter in the red. At the lower levels, however, the proportion of consumers incurring deficits and the amounts of their deficits were so great as to more than outweigh the smaller proportion with net savings.

TABLE 9.—*Average Money Income and Outlay,¹ City Families and Single Persons, by Money Income Class*

12 MONTHS OF 1941

Annual money income class	Average money income	Average money expenditures for—			Average net sav- ing ³ (+) or deficit (-)
		Current consump- tion	Gifts and contribu- tions	Per- sonal- tax pay- ments ²	
<i>Money income, 1941</i>					
Under \$500.....	\$307	\$420	\$20	(4)	-\$126
\$500 and under \$1,000.....	748	750	30	\$1	-35
\$1,000 and under \$1,500.....	1,246	1,215	45	3	+1
\$1,500 and under \$2,000.....	1,750	1,671	68	8	+32
\$2,000 and under \$2,500.....	2,240	2,103	91	11	+74
\$2,500 and under \$3,000.....	2,742	2,516	115	14	+137
\$3,000 and under \$5,000.....	3,732	3,246	164	23	+327
\$5,000 and under \$10,000.....	6,208	4,704	309	97	+1,091

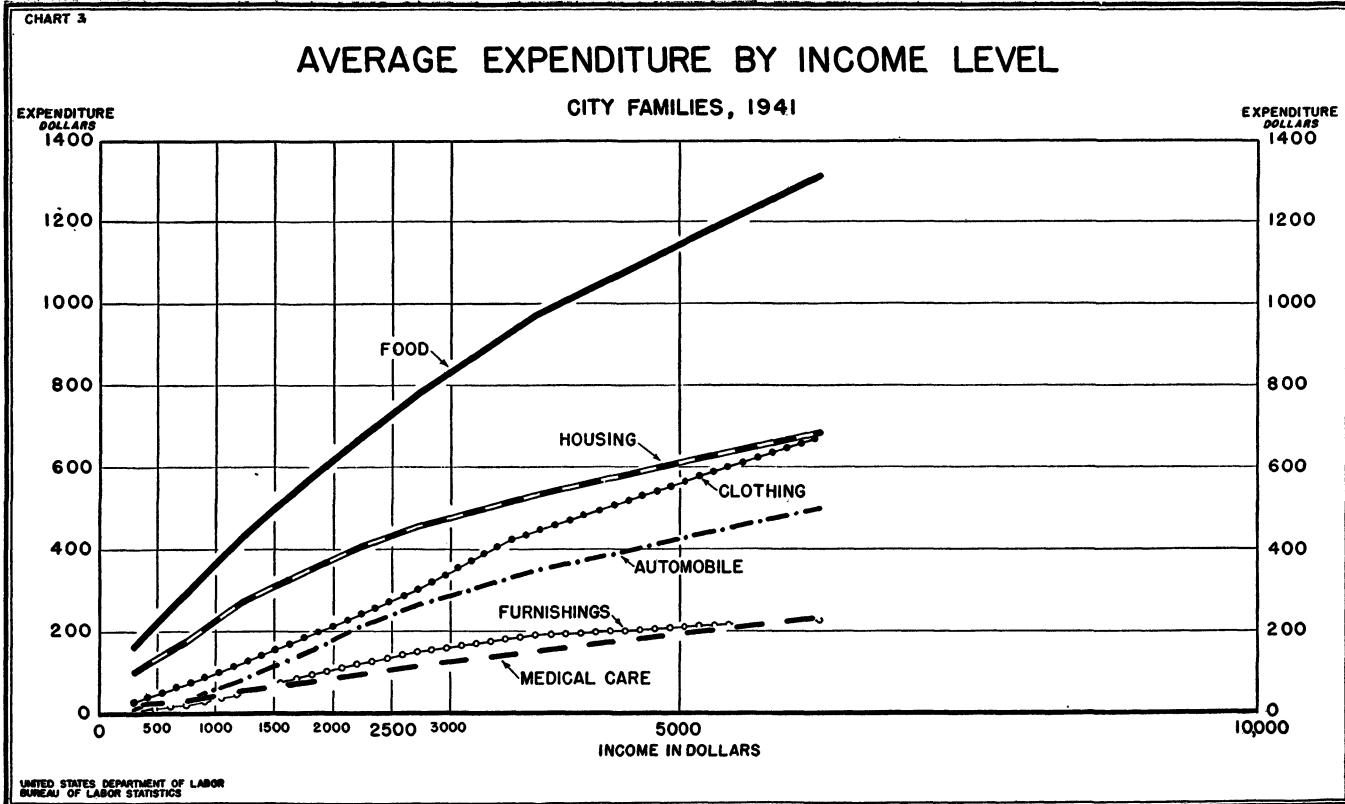
Percent of money income ⁴					
Under \$500.....	100.0	136.5	6.6	0.1	-41.0
\$500 and under \$1,000.....	100.0	100.9	4.1	.1	-4.7
\$1,000 and under \$1,500.....	100.0	97.5	3.6	.2	+.1
\$1,500 and under \$2,000.....	100.0	95.5	3.9	.5	+1.8
\$2,000 and under \$2,500.....	100.0	93.9	4.0	.5	+3.3
\$2,500 and under \$3,000.....	100.0	91.8	4.2	.5	+5.0
\$3,000 and under \$5,000.....	100.0	87.0	4.4	.6	+8.8
\$5,000 and under \$10,000.....	100.0	75.8	5.0	1.6	+17.6

FIRST 3 MONTHS OF 1942

<i>Money income, 1942⁵</i>					
Under \$500.....	\$75	\$105	\$2	\$1	-\$37
\$500 and under \$1,000.....	182	207	6	1	-30
\$1,000 and under \$1,500.....	312	310	10	2	-4
\$1,500 and under \$2,000.....	436	400	16	5	+24
\$2,000 and under \$2,500.....	556	489	21	8	+48
\$2,500 and under \$3,000.....	685	585	26	13	+71
\$3,000 and under \$5,000.....	932	764	34	26	+113
\$5,000 and under \$10,000.....	1,615	1,184	58	82	+298

Percent of money income ⁶					
Under \$500.....	100.0	143.6	2.5	1.2	-49.2
\$500 and under \$1,000.....	100.0	114.1	3.4	.3	-16.6
\$1,000 and under \$1,500.....	100.0	99.1	3.2	.8	-1.2
\$1,500 and under \$2,000.....	100.0	91.8	3.6	1.1	+5.6
\$2,000 and under \$2,500.....	100.0	87.9	3.8	1.4	+8.7
\$2,500 and under \$3,000.....	100.0	85.4	3.8	1.8	+10.4
\$3,000 and under \$5,000.....	100.0	82.1	3.6	2.8	+12.1
\$5,000 and under \$10,000.....	100.0	73.3	3.6	5.1	+18.4

¹ The difference between income and expenditures plus savings is accounted for by minor discrepancies in figures furnished by families and in a few instances by nonincome funds, such as inheritances received.² Includes only personal income tax, poll taxes, and certain personal property taxes.³ Figures for 1942 include amounts in excess of the one-fourth of Federal income tax on 1941 income which were actually paid during first quarter of 1942.⁴ Less than 50 cents.⁵ Computed on basis of unrounded dollar-and-cent figures.⁶ Annual rate of money income based on first quarter of 1942.



For low-income consumers, on the average, the first quarter of 1942 brought a large increase in debt. While savings for the entire group of city consumers were increasing by 70 percent, and the savings in income levels from \$1,500 to \$10,000 by 75 percent, consumers at the lowest levels were incurring debts or withdrawing from past savings to the extent of \$21 during the quarter. This compares with a quarterly average decrease in assets or increase in liabilities during 1941 of \$10.

The inability of the low-income groups to make ends meet during the first 3 months of 1942 is partly explained by increased living costs. Thus, families and single persons with incomes below \$1,500 in 1942 and almost the same income in 1941 spent 7 percent more in the later than in the earlier period. This increase in expenditures almost exactly matched the 7.5-percent increase in living costs that occurred between the two periods. Those with fixed incomes, however, met such increases in living costs by incurring debts or drawing on past savings.

In addition to the substantial number with fixed incomes there was a large number of consumers to whom 1942 meant sharply decreased incomes. Thus, fully one-sixth of all those with incomes below \$1,500 in 1942 had incomes in 1941 which were more than 33 percent higher. These consumers, in many cases the victims of priority unemployment, were unable to lower their level of living to the full extent of their decline in income. They incurred debts or made withdrawals from past savings.

The increase in expenditures at these lowest levels was not scattered among all items of expenditure, however. Food, housing, and medical care each came in for higher expenditures during 1942. Thus, while at the income level \$500 to \$1,000 total expenditures increased by \$78 per year, expenditures for food, housing, and medical care increased by \$76. About 44 percent of the money income of all city consumers with incomes between \$500 and \$1,000 went for food, and another 28 percent for housing, fuel, and light, in the early months of 1942, as compared with 40 and 24 percent, respectively, for those with similar incomes in 1941. With clothing and other essentials to be bought, the debts of families in this group amounted to 17 percent of the total of their current cash incomes.

In contrast with the consumers at the lower income levels, families with incomes above \$1,500 in 1942 spent less for current consumption and saved more than families with incomes of that amount had done in 1941. The combined effect of the wartime cessation of the production of durable goods and the increased volume of war-bond purchases was apparent in the sharply increased savings at each income level of consumers whose incomes were the same in 1941 and 1942.

One-fourth of the families and single persons with 1942 incomes above \$1,500, however, were those who had received income increases of 25 percent or more. Their level of living did not increase to nearly the same extent as their income. Their income increases were in large part devoted to paying off old debts and buying war bonds.

The decreases in expenditure at income levels above \$1,500 were concentrated in two groups—automobiles and furnishings. Since expenditures for other items in the aggregate showed only a small decline, it may be concluded that the sharp increases in savings at these levels were made possible chiefly by the reduction in the expenditures for these two groups.

TABLE 10.—*Average Money Expenditures of City Families and
12 MONTHS*

Annual money income class	Total	Food	Housing, fuel, light, refriger- ation	House- hold opera- tion	Furnish- ings and equip- ment	Cloth- ing	Auto- mobile
<i>Money income, 1941</i>							
Under \$500.....	\$420	\$167	\$103	\$20	\$8	\$29	\$16
\$500 and under \$1,000.....	750	295	177	33	22	71	33
\$1,000 and under \$1,500.....	1,215	433	271	50	50	128	81
\$1,500 and under \$2,000.....	1,671	558	344	71	89	184	148
\$2,000 and under \$2,500.....	2,103	674	405	92	123	242	210
\$2,500 and under \$3,000.....	2,516	794	456	112	153	303	265
\$3,000 and under \$5,000.....	3,246	973	534	152	193	421	353
\$5,000 and under \$10,000.....	4,704	1,311	682	275	228	673	496
<i>Percent of money income¹</i>							
Under \$500.....	126.5	54.3	33.3	6.5	2.7	9.5	5.1
\$500 and under \$1,000.....	100.9	39.7	23.9	4.5	3.0	9.5	4.4
\$1,000 and under \$1,500.....	97.5	34.8	21.7	4.0	4.0	10.2	6.5
\$1,500 and under \$2,000.....	95.5	31.9	19.7	4.1	5.1	10.5	8.4
\$2,000 and under \$2,500.....	93.9	30.1	18.1	4.1	5.5	10.8	9.4
\$2,500 and under \$3,000.....	91.8	28.6	16.6	4.1	5.6	11.0	9.7
\$3,000 and under \$5,000.....	87.0	26.1	14.3	4.1	5.2	11.3	9.4
\$5,000 and under \$10,000.....	75.8	21.1	11.0	4.4	3.7	10.9	8.0
<i>FIRST 3 MONTHS</i>							
<i>Money income, 1942²</i>							
Under \$500.....	\$105	\$45	\$27	\$5	\$2	\$7	\$3
\$500 and under \$1,000.....	207	81	51	9	5	16	8
\$1,000 and under \$1,500.....	310	111	73	13	11	30	14
\$1,500 and under \$2,000.....	400	141	90	18	14	44	21
\$2,000 and under \$2,500.....	429	168	103	22	19	58	29
\$2,500 and under \$3,000.....	585	194	115	27	26	73	40
\$3,000 and under \$5,000.....	764	241	132	35	41	101	63
\$5,000 and under \$10,000.....	1,184	332	169	64	82	166	119
<i>Percent of money income¹</i>							
Under \$500.....	143.6	59.8	36.2	6.7	2.9	9.5	4.4
\$500 and under \$1,000.....	114.1	44.4	28.3	5.1	2.9	8.6	4.3
\$1,000 and under \$1,500.....	99.1	35.7	23.2	4.2	3.6	9.6	4.3
\$1,500 and under \$2,000.....	91.8	32.3	20.5	4.1	3.3	10.0	4.7
\$2,000 and under \$2,500.....	87.9	30.1	18.5	4.0	3.4	10.3	5.3
\$2,500 and under \$3,000.....	85.4	28.4	16.8	3.9	3.7	10.6	5.9
\$3,000 and under \$5,000.....	82.1	25.9	14.2	3.8	4.4	10.9	6.8
\$5,000 and under \$10,000.....	73.3	20.6	10.4	4.0	5.0	10.3	7.4

¹ Computed on the basis of unrounded dollar-and-cent figures.

² Annual rate of income based on first quarter of 1942.

³ Less than 50 cents.

Personal-tax payments at the lowest income levels represent mostly poll taxes and occasional small amounts of personal-property taxes. In some instances, however, consumers whose incomes in the 1942 period were greatly reduced from the previous year were paying income tax on the previous year's income. At the higher incomes where income-tax returns are the most important part of the total personal-tax figure, the tax rose both in dollars and as a percentage of income. The rise was much steeper in 1942 than in 1941, largely as a result of higher tax rates and lowered exemptions.

Single Persons for Current Consumption, by Money Income Class

OF 1941

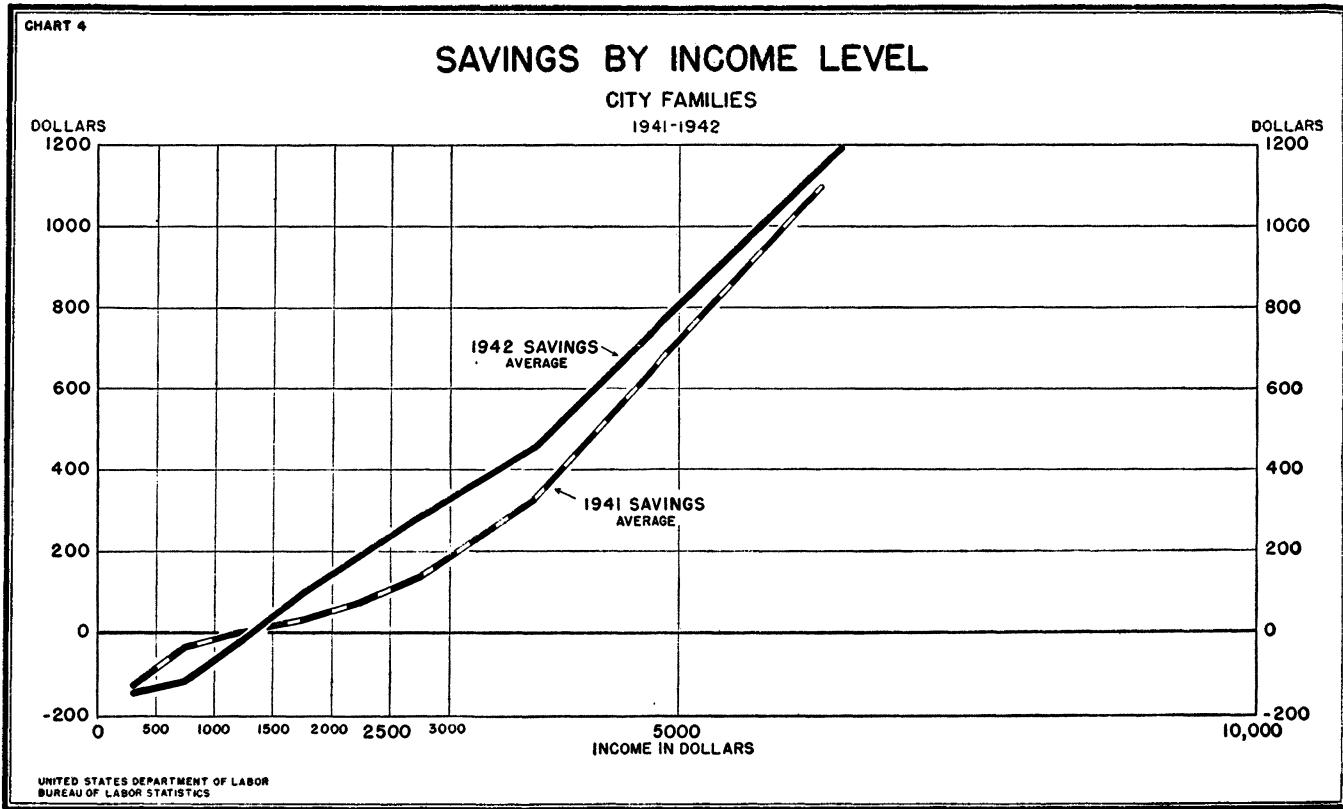
Other transportation	Personal care	Medical care	Recreation	Tobacco	Reading	Formal education	Other items	Annual money income class
<i>Money income, 1941</i>								
\$8	\$8	\$26	\$20	\$7	\$4	\$3	\$1	Under \$500.
16	17	32	20	19	8	4	3	\$500 and under \$1,000.
26	26	58	35	31	13	4	9	\$1,000 and under \$1,500.
34	36	77	54	38	17	7	14	\$1,500 and under \$2,000.
42	45	96	77	46	21	12	18	\$2,000 and under \$2,500.
50	55	115	103	55	25	18	22	\$2,500 and under \$3,000.
70	72	153	158	72	33	36	26	\$3,000 and under \$5,000.
132	108	236	293	105	49	85	31	\$5,000 and under \$10,000.
Percent of money income ¹								
2.5	2.7	8.3	6.6	2.3	1.4	0.8	0.5	Under \$500.
2.2	2.2	4.3	2.6	2.6	1.1	.5	.4	\$500 and under \$1,000.
2.1	2.1	4.7	2.8	2.5	1.0	.4	.7	\$1,000 and under \$1,500.
1.9	2.0	4.4	3.1	2.2	1.0	.4	.8	\$1,500 and under \$2,000.
1.8	2.0	4.3	3.4	2.1	1.0	.5	.8	\$2,000 and under \$2,500.
1.8	2.0	4.2	3.8	2.0	.9	.7	.8	\$2,500 and under \$3,000.
1.9	1.9	4.1	4.2	1.9	.9	1.0	.7	\$3,000 and under \$5,000.
2.1	1.7	3.8	4.7	1.7	.8	1.4	.5	\$5,000 and under \$10,000.

OF 1942

								Money income, 1942 ²
\$1	\$2	\$7	\$1	\$2	\$1	(*)	\$2	Under \$500.
5	4	13	4	4	2	\$1	4	\$500 and under \$1,000.
8	7	18	8	7	4	2	4	\$1,000 and under \$1,500.
9	9	23	12	9	4	2	4	\$1,500 and under \$2,000.
10	11	28	17	11	5	4	4	\$2,000 and under \$2,500.
12	13	34	23	13	6	5	4	\$2,500 and under \$3,000.
16	17	45	36	17	8	9	5	\$3,000 and under \$5,000.
30	26	61	69	24	12	20	10	\$5,000 and under \$10,000.
Percent of money income ¹								
1.9	3.2	9.4	1.6	2.7	1.9	0.3	3.1	Under \$500.
2.6	2.8	7.3	2.2	2.4	1.1	.6	2.0	\$500 and under \$1,000.
2.5	2.2	5.8	2.6	2.3	1.2	.5	1.4	\$1,000 and under \$1,500.
2.0	2.1	5.3	2.8	2.1	1.0	.6	1.0	\$1,500 and under \$2,000.
1.8	2.0	5.1	3.1	2.0	1.0	.6	.7	\$2,000 and under \$2,500.
1.8	1.9	4.9	3.4	1.9	.9	.7	.6	\$2,500 and under \$3,000.
1.8	1.8	4.6	3.8	1.8	.8	.9	.6	\$3,000 and under \$5,000.
1.8	1.6	3.8	4.3	1.5	.8	1.2	.6	\$5,000 and under \$10,000.

These figures cannot be used, however, as a measure of the distribution of the total tax burden of the Nation among consumers at various income levels. Such a measure would have to take account of such other taxes as excise, sales, gasoline, and automobile taxes, as well as taxes on homes and other miscellaneous taxes.⁷ This calculation would show much higher tax payments at lower income levels than are indicated in the present figures.

⁷ The latest such study is TNEC Monograph No. 3: Who Pays the Taxes, by Gerhard Colm and Helen Tarasov. Washington, 1940.



APPENDIX—METHODS AND ADEQUACY OF THE SAMPLE

Summary

The preliminary reports from the Survey of Family Spending and Saving in Wartime have been received with great public interest. They have stimulated many questions as to the methods by which the sample was drawn and its reliability. This appendix attempts to answer these questions.

The method of drawing the sample differs in several important respects from those followed in earlier surveys of family incomes and expenditures. These changes were deliberately made, in accordance with the latest developments in sampling theory, to insure greatest possible efficiency and reliability in yielding national estimates. The coverage of total population, that is, the inclusion in the sample of all segments of the population (such as relief, foreign-born, broken families, single consumers, certain occupational groups or city-size classes) is more complete than in any previous survey.

Altogether 1,300 families and single consumers (referred to here as consumer units) in 62 cities were covered. They represent all regions of the country and cities in every size class from those with a population of 2,500 persons to the largest city in the country. In selecting these cities, proper emphasis was given to each of the following factors: Region, city-size class, proximity to a metropolis, racial composition of population, median monthly rent and rental value. The number of interviews obtained in each of the 62 cities was proportioned to the total population in that city and in all other cities of similar characteristics not actually covered. The interviews within each selected city were assigned in such a way as to give every family and single consumer in each selected city an equal chance to be included in the sample. Furthermore, in cities with populations over 50,000, for which 1940 census data on average rent by block could be obtained, the selection among blocks was carried out in such a way as to include the correct proportion of blocks at each rent level. The final result constitutes an estimate for the entire urban population of the country.

The size of sample is smaller than in any previous survey on which national estimates have been based. The smallness of the sample yields positive advantages in speed of completion, cost, quality of personnel, avoidance of bias, and simplicity of tabulation. Reliability for the purpose of national estimates of a sample of this size, when selected subject to the careful controls described, is confirmed by theoretical tests and also by comparison of the results yielded by the actual sample drawn with census data and other data from independent sources. The internal consistency of the sample data themselves is another indication of the adequacy of the sample size for the purpose of national estimates. The general patterns of spending are entirely consistent with the results obtained in 1935-36 from a much more extensive but less inclusive sample. The points at which

divergencies are noted, as in expenditures for automobiles, other durable goods, and clothing, and in savings, are the very points at which known changes in general conditions account for current behavior. The comparisons of spending of city, rural nonfarm, and farm consumers at comparable income levels are remarkably consistent.

The sample is too small, however, to yield reliable estimates for localities. It is also too small to yield an analysis of the separate effects upon spending of other factors in addition to income, such as region, city size, occupational group, family composition, nativity, etc. A considerably larger sample would be required for these purposes. Since, however, by the very process of sampling followed, all of these characteristics have been allowed to fall as they come in the total population, the composite averages at an income level yield an excellent estimate for the total population at that income level.

Further tests of reliability and comparisons with independent data from other sources will be made when detailed tabulations have been completed and when the data from city consumers collected by the Bureau of Labor Statistics have been combined with those for farm and rural nonfarm consumers collected by the Bureau of Home Economics of the United States Department of Agriculture.

General Considerations

SIZE OF SAMPLE

The estimates for city consumers from the Survey of Family Spending and Saving in Wartime are based upon information provided by nearly 1,300 families and single consumers surveyed by the Bureau of Labor Statistics. A total of 1,700 rural consumer units were surveyed by the Bureau of Home Economics of whom about 800 lived on farms. Thus the total for nonfarm consumer units is about 2,200, and for farm and nonfarm consumer units combined about 3,000. The Consumer Purchases Study of 1935-36 (conducted by the Bureau of Labor Statistics and the Bureau of Home Economics in cooperation with the National Resources Committee and the Works Progress Administration), which provided the bulk of the data used by the National Resources Committee⁸ in its estimates of national income and expenditure for that period, obtained income information from about 300,000 families, and information on expenditures from about 60,000 families. The Study of Money Disbursements of Wage Earners and Lower-Salaried Workers, 1934-36, which provided revised weights for the Bureau of Labor Statistics cost-of-living index, covered over 14,000 families. The Bureau of Labor Statistics survey made during the period 1917-19 included over 12,000 families, while the two pre-World War I surveys made by the Bureau each included in excess of 5,000 families. The present survey is consequently the smallest official survey undertaken in this country for estimating income and expenditure even for one occupational group on a national basis.

⁸ National Resources Planning Board (National Resources Committee), *Consumer Incomes in the United States*, Washington, Government Printing Office, 1938; *Consumer Expenditures in the United States*, Washington, Government Printing Office, 1939; *Family Expenditures in the United States, Statistical Tables and Appendixes*, Washington, Government Printing Office, 1941.

PURPOSE

Despite its relatively small size, the present sample yields general estimates of income and expenditure by the Nation's consumers of at least the same accuracy as those which could have been derived from any of the preceding surveys. It was designed with the sole purpose of providing such estimates, whereas all previous surveys of family income and expenditure have been designed with quite different purposes in mind. The Consumer Purchases Study, for example, was originally conceived as an inquiry into the differing effects of income, family type, occupation, region, and degree of urbanization upon expenditure. The Study of Money Disbursements of Wage Earners and Clerical Workers and the 1917-19 survey of wage earners were both designed to obtain weights for cost-of-living indexes in specific cities. The 1891 study of the Commissioner of Labor was undertaken to provide data useful in revisions of prevailing tariffs.

LIMITATIONS OF EARLIER STUDIES

The original purpose of the Consumer Purchases Study led to a sample design suitable for that purpose, but with several important drawbacks from the viewpoint of national estimates. Thus, expenditure data were not obtained in that study from any family which had been on relief at any time during the year, which did not contain both a husband and a wife, or in which either spouse was foreign-born. In New York City, the most extreme case, but one which includes 10 percent of the urban population, these restrictions, plus several others peculiar to the sampling in that city, meant that only one-seventh of the population of that city was eligible for inclusion in the sample.

Similarly, the choice of communities surveyed in the Consumer Purchases Study, while entirely adequate for the purposes of revealing the effect of degree of urbanization upon income and expenditure, was not the most satisfactory for preparing national estimates. Thus, suburban areas surrounding large metropolises, containing almost 17 million persons in 1930, were virtually unrepresented. Only 7 cities with populations over 100,000 were included, although such cities include about half the urban population. No urban areas in the West South Central States, containing almost 4.5 million city residents in 1930, were covered. The rural nonfarm sample included villages but no open country. The limitations of earlier Bureau of Labor Statistics studies to certain occupational groups in cities selected because of their industrial or commercial importance meant that their results could not be projected to the entire population with any certainty.

COVERAGE OF TOTAL POPULATION

The sample for the present study, designed for the purpose of obtaining national estimates, avoids these difficulties. The communities covered comprise a complete cross section of the Nation's cities and towns. The sample obtains for the first time information on the relative number of single consumers (i. e. persons not sharing their incomes and their living quarters with any other persons), their distribution by income level, and their expenditures at each income level. In addition, it is the only survey which has ever obtained compreh-

hensive information on the incomes and expenditures of all of the following classes of the population in addition to so-called "normal" nonrelief families: relief families, families with foreign-born heads, and those lacking one spouse.

PERSONNEL

Before preceding to a detailed consideration of the present sample it is helpful to recall one positive advantage of small as compared with large samples; which although well known, is frequently overlooked—the caliber of the agents who obtain the information from families. Particularly, in a study with as extensive a schedule form as that necessary in surveys of income and expenditure, the quality of the interviewers is an important consideration. In a survey of the scope of the Consumer Purchases Study, it is necessary to hire as many as 50 agents in towns with no more than 25,000 inhabitants. It is not always possible to find 50 persons in a small town who are at the same time diplomatic and capable of mastering the double entry bookkeeping involved in determining a family's income, expenditure, and saving. In the present survey only one worker was employed in most of the towns covered. In even very small towns it was therefore possible to find qualified personnel.

AVOIDANCE OF BIAS IN THE CURRENT SURVEY

In drawing a sample as small as the present one, it was possible to use great care in the actual selection of the consumer units to be surveyed. All controls were centralized in the Washington office, thus avoiding biases resulting from differing interpretations of instructions by local supervisors or enumerators. The block listings, described in a later section, were all sent to Washington for the actual drawing of addresses or designations of consumer units. All substitute addresses were drawn in Washington, none were left to the discretion of agents.

The percentage of refusals was very low. Less than 7 percent of the families originally selected failed to supply the information requested. This compares with a substitution rate of approximately 15 percent in the urban series of the Consumer Purchases Study. A contributing factor to this lower rate was the willingness of families to cooperate in view of the war situation, as compared with public attitudes immediately following the depression. Another factor was the relatively high ability of the agents in this survey.

An additional advantage made possible by a small sample is the more intensive editing which can be given each family report. Thus in the present survey only four schedules were discarded for inconsistency or patent error. It was thus possible to avoid biases which may result from large-scale surveys in which a greater proportion of schedules from families with complicated finances are discarded because they do not come within the tolerable limits of discrepancy.

Experiment To Test Adequacy of a Small Sample

Before this survey was undertaken an experiment was made to test the extent to which a small sample could estimate one characteristic of the entire urban population. The test was so designed as to draw 5 independent samples, each consisting of 50 cities and 1,000 families. From each of these samples an estimate of the distribution

of urban home owners by value of home and of urban renters by monthly rent was prepared. Comparison of each of these five samples with the actual distribution of 20 million urban renters and owners as shown by the 1930 census gives an indication of the essential accuracy of a small sample. (See table 11.)

TABLE 11.—*Results of 6 Samples Showing Estimated Distributions of Families by Rent Class or Rental-Value Class in 1930*

Monthly rent and value of home	Actual percentage from the 1930 census	Sample number					
		1 ¹	2 ¹	3 ¹	4 ¹	5 ¹	6 ²
Percentage of families who were owners	43	45	46	46	46	42	40
Percentage of families who were renters	57	55	54	54	54	58	60
Percentage of renters with monthly rent of—							
Under \$15	13	14	17	11	13	14	18
\$15 and under \$30	32	30	32	35	37	32	34
\$30 and under \$50	31	33	29	34	25	30	29
\$50 and under \$100	19	18	17	15	19	19	15
\$100 and over	3	3	3	3	2	4	2
No report	2	2	2	2	4	1	1
Median rent	\$33.23	\$33.64	\$30.69	\$32.35	\$30.00	\$32.67	\$29.12
Percentage of home owners with homes valued at—							
Less than \$1,500	6	8	7	7	5	4	6
\$1,500 and less than \$3,000	13	13	12	16	10	10	15
\$3,000 and less than \$5,000	23	21	24	27	22	26	26
\$5,000 and less than \$7,500	26	28	29	23	28	23	27
\$7,500 and less than \$10,000	12	10	10	11	13	12	11
\$10,000 and over	19	18	17	15	20	24	15
No report	1	2	1	1	2	1	1
Median value of home	\$5,709	\$5,714	\$5,603	\$5,000	\$6,161	\$6,087	\$5,278

¹ Based upon a random stratified selection of 50 cities and a random selection of 1,000 families within the cities.

² Based upon the complete census figures on rents, rental value, and home tenure for the 42 cities used by the National Resources Committee as the basis for its estimates of national income and expenditure in 1935-36.

In the first sample, 50 cities were chosen in the same fashion as the 62 cities actually used in the present sample (see pp. 29 ff.), except fewer controls were used; region and city size were the only bases of stratification. (Each additional pertinent control increases sample accuracy.) The same methods were used in allocating the 1,000 cases among the 50 cities as were used in the present sample. To select the "sample cases" within each of the 50 cities each of the "sample families" was located in a census rent class or rental-value class by selection of a random number. The samples in each of the 50 cities were pooled to yield an estimate for all cities in the United States. The same experiment was repeated 4 additional times, each time drawing a different combination of 50 cities and each time selecting 1,000 "sample cases" within rent classes or rental-value classes by use of random numbers.

For additional comparison a sixth sample was prepared composed of the 42 cities from the Study of Consumer Purchases used by the National Resources Committee in its estimates of income and expenditure. The rent and rental value distributions as shown by the 1930 census for each of these 42 cities were weighted together using the population weights developed by the National Resources Committee. This yielded a sixth estimate of the distribution by rent or rental-value class of urban home owners and renters. This estimate

is, in effect, based upon a sample of several million families (since it uses census figures from a complete enumeration within each of the 42 cities) and is directly comparable with those based upon 1,000 families.

All six estimates are shown in table 11, together with the actual distribution by rent class of urban families as shown by the 1930 census.

Two general conclusions emerge from this experiment: (1) That a sample as small as 1,000 cases can, if properly selected, give estimates of a high order of accuracy; (2) that estimates based upon large samples, but not covering all sections of the urban population will give less accurate estimates than small samples which do not exclude any section of the population. Specifically, a complete enumeration of the population living in the 42 cities used by the National Resources Committee will give less accurate estimates than a sample of 1,000 living in 50 cities when the cities are selected so as to cover all sections of the urban population.

While it is generally recognized that size of sample alone is no guarantee of accuracy, these conclusions may seem little short of paradoxical. The explanation lies in the manner in which the cities included in the sixth sample were selected. Only 7 cities with populations above 100,000 were included, although such cities contain about half the urban population. Each of the 5 samples drawn in the experiment included 25 such cities. The sixth sample of 42 cities did not have complete regional coverage; it had no cities with populations below 9,000; it included no small cities lying within metropolitan areas. Despite the several million families that sample included, it consequently gives poorer estimates of median rent than any of the 5 experimental samples of 1,000 and poorer estimates of median rental value than 4 of the 5.

Comparisons of Estimates Based on Actual Survey Sample With Results From Other Agencies

The experiment described in the preceding paragraphs is an indication of the reliability of a sample of 1,000 cases when drawn from a population which is completely listed. The same results could have been predicted by the theory of probability. Because it is rarely possible in a Nation-wide study of this character to make certain that every family will have an equal chance of being included, an actual field sample of this size may have larger errors. To check on this point the following tables offer a comparison of certain characteristics of the families in the sample actually drawn in cities in the Survey of Family Spending and Saving in Wartime with comparable characteristics as measured by the census.

AGE DISTRIBUTION OF POPULATION

The age distribution of the individuals in the survey sample is compared in table 12 with that of all urban persons in April 1940 as shown by the Bureau of the Census. In general the distributions check well. There are several sources of disagreement, however, which should be remembered in any detailed comparison of the distributions.

1. The sample applies to a period 2 years after that of the census. This means first that the sample age distributions will apply to a some-

what older population than those of the census and, secondly, will exclude males in the armed forces at the time of scheduling but in civil life at the time of the census.

2. It is known that every census has underenumerated children less than 5 years old. Such an underenumeration is considerably less likely in the present survey since special expenses of such children, as for clothing, are called for on the schedule form.

3. There appears to be some tendency for women in their late twenties and in their thirties to underreport their age to the census enumerator. Thus, in almost every census the number of native-born women 20 to 24 has been above the expected survivorship from age 10 to 14 as returned 10 years previous.⁹

TABLE 12.—*Age Distribution, All Urban Areas, by Sex—Bureau of Labor Statistics Sample and Bureau of the Census*

Age	Male		Female	
	Sample 1942	Census 1940	Sample 1942	Census 1940
14 or less.....	23.0	22.2	22.3	20.8
15-24.....	16.9	17.4	17.5	18.2
25-34.....	15.7	17.1	15.9	17.8
35-44.....	14.8	15.4	16.3	15.3
45-54.....	12.9	13.2	12.8	12.4
55-64.....	9.3	8.5	8.6	8.2
65 and over.....	7.3	6.2	6.7	6.3
Total.....	100.0	100.0	100.0	100.0

Insofar as the ability of the agents in the present survey was above that of the average census enumerator (of whom there were approximately 115,000), these errors of enumeration would be expected to be less frequent.

An independent estimate of the distribution of the urban population by age and sex in April 1942, with the military and institutional population subtracted, in general shows even closer agreement with the sample distribution.

CHARACTERISTICS OF HOUSING

Table 13 compares certain characteristics of housing in cities over 50,000 as estimated by the sample and as shown by the 1940 census. Because of the 2-year difference in the period to which they refer and the fact that an occupied dwelling unit, as defined by the census, is not the same as an economic family, as defined in this study, perfect agreement was not to be expected. Nevertheless, the general agreement is close.

TABLE 13.—*Housing Characteristics, Cities with Population of 50,000 or More—Bureau of Labor Statistics Sample and Bureau of the Census*

Item	Sample 1942	Census 1940
Percentage of dwelling units:		
Owner occupied.....	31.6	31.6
Having 1.5 or fewer persons per room.....	93.0	94.6
Occupied by whites.....	91.7	90.8
Mortgaged (owned homes only).....	51.1	56.1

⁹ U. S. Bureau of the Census, 1940 Population, vol. II, p. 568.

NATIONAL AGGREGATES

There are, of course, many other characteristics for which checks can be made. Most of them must wait on a combination of the data for urban families with similar data for rural families collected by the Bureau of Home Economics and adjustment of the resulting figures for comparability of definitions with the estimates of other agencies. Preliminary work in this direction indicates close checks for the following items: Aggregate national food expenditure; aggregate national purchases of war bonds; percentage change in aggregate savings by individuals, 1941 to first quarter of 1942; aggregate national furniture expenditure; total registration of passenger automobiles.

Consistency of Sample Data

An additional way in which the usefulness of a sample of the present size may be appraised is by the consistency of the results obtained, particularly when the sample is broken into small subgroups.¹⁰

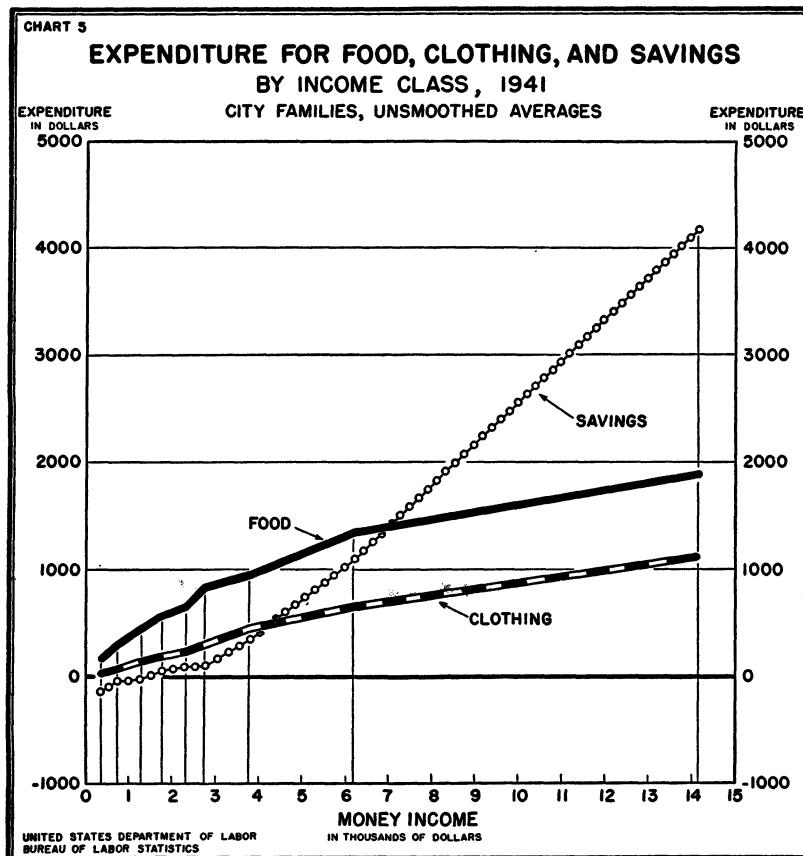
The most well-known of these consistencies, confirmed by over a century of surveys of family incomes and expenditures, is the differing relation between income and expenditure for different groups of commodities and services. Chart 5, which shows average expenditure in 1941 at different income levels, for food, clothing, and savings, presents an example of this consistency.¹¹ The smoothness of the change from income level to income level is all that could be asked from a sample of any size. The behavior of these curves when based upon too small a sample for the purpose at hand is exceedingly irregular, as may be confirmed by inspection of some of the samples for individual cities in the Consumer Purchases Study, the Study of Money Disbursements of Wage Earners and Clerical Workers, or the 1917-19 Cost-of-Living Study.

CONSISTENCY AMONG SMALL SUBGROUPS WITH CHANGED INCOMES

A more striking illustration of the consistency of the data when broken into small subgroups is afforded by classifying families not only by income but also by whether they had recently experienced an increase or a decrease in income. In absence of data, it has frequently been assumed that when a family moves from one income bracket to another it adopts the consumption habits of the families in the new income bracket. The classification of families by both present income and whether income has increased or decreased indicates that this assumption is subject to some error, at least over relatively short-time periods. Food expenditures in 1942 are shown separately in table 14 for families having income decreases and those having income increases of 5 percent or more between 1941 and the

¹⁰ This device of testing the stability of a sample by testing the consistency of subgroups is one which has found special application in the field of industrial testing and quality control. Walter A. Shewhart: Statistical method from the viewpoint of quality control. Washington, 1939, pp. 33-36.

¹¹ Although the estimates of expenditure at different income levels published in the main part of this bulletin have been smoothed to eliminate slight irregularities, the data published in this section are all unsmoothed, i. e., the averages yielded directly by the original reports are shown. When small samples are subdivided, the results should show some irregularities. The results are smoothed in the body of the report to eliminate these irregularities because it increases the accuracy of the result. For example, it is obvious that medical expenditures depend on sickness in the family. It is largely a matter of chance whether severe illness strikes a family with \$1,500 or \$2,000 of income. In a small sample the average expenditure for medical care will therefore be higher for families of \$1,500 than for families of \$2,000, if, among the families selected, those with \$1,500 happen to have had extraordinary illness while those with \$2,000 did not. But if throughout the rest of the sample one finds that medical expenditures rise with income, it is more accurate to consider this general tendency and to estimate medical expenditures at various income levels from all the cases than it is to assume that the irregularity indicated by the small sample would hold also for a large sample.



first quarter of 1942. The table indicates that present consumption is influenced not only by present but by past income. Although the difference in food expenditures between the 2 subgroups does not average more than \$25 at any income level below \$5,000, the present sample is sufficiently large to detect it at every income level.

SUBGROUPS SHOWING INCOME DISTRIBUTION BY AVERAGE RENT OF BLOCK

A third example of consistency within subgroups of the sample is the income distribution of families and single persons by the average rent of the block in which they live. As explained on page 32, average block rent in April 1940 as reported by the Bureau of the Census was one of the bases used in selecting the sample of families in cities above 50,000. Chart 6 shows income distributions separately for families living in the lowest sixth of the rent blocks and the highest sixth. The chart is useful not merely in showing that average block rent is related to the income distribution of the families living there. It demonstrates that a sample of the present size can be broken into small subgroups and still show consistent differences. Examples of this type can be multiplied indefinitely. Anyone who works continuously with the sample data cannot but be impressed with innumerable cases of this type.

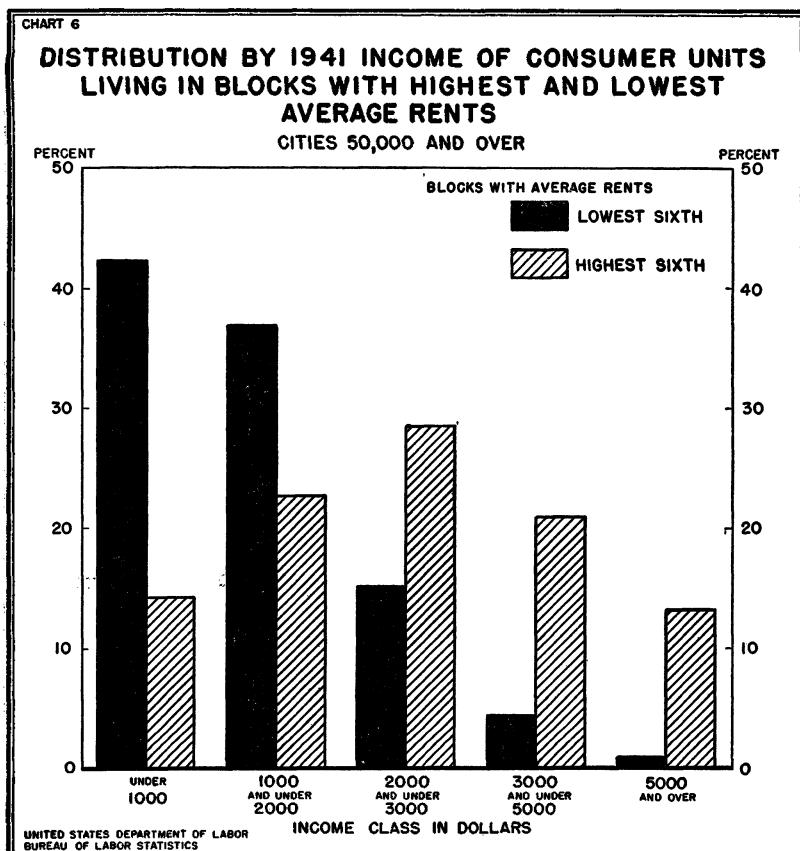


TABLE 14.—*Quarterly Food Expenditure, Consumer Units With Income Changes, City Families and Single Consumers, First Quarter of 1942*

Money income, ¹ first quarter of 1942	Families having had a decrease in income of 5 percent or more	Families having had an increase in income of 5 percent or more
Under \$500	\$57	\$36
\$500 and under \$1,000	101	74
\$1,000 and under \$1,500	125	100
\$1,500 and under \$2,000	146	134
\$2,000 and under \$2,500	182	164
\$2,500 and under \$3,000	204	198
\$3,000 and under \$5,000	261	242
\$5,000 and under \$10,000	415	316

¹ Annual rate.

Selection of Survey Sample

The sample of urban families has been selected from 62 cities¹² scattered throughout the country. For any stated number of families, the larger the number of communities covered, the smaller is the sampling error. Thus, the only limit to the number of cities included

¹² Cities are urban places with population of 2,500 or more as designated by the Bureau of the Census.

in any sample is supplied by considerations of cost, since it is generally less expensive to cover a fixed number of families in a smaller than in a larger number of cities. The cost factors associated with the present survey indicated that the most efficient disposition of available funds (solely from the point of view of minimum sampling error) would have involved taking approximately 90 cities. That number of cities, however, would have implied an average of less than 15 families per city. Since the compensation for interviewing this number of families would have been too low to attract any large number of capable interviewers, the number of cities was reduced to 62 to provide an average of approximately 20 families per city.

SELECTION OF CITIES

The communities were so selected as to give proper representation to (1) each city-size group, (2) proximity to a metropolis (for cities under 50,000), (3) each region and State, (4) low-, medium-, and high-rent cities, (5) cities of differing racial composition.

A comparison of the distribution of sample cities with that of the total urban population among 6 city-size classes is shown in table 15. The distribution of the sample cities among the 6 city-size classes was made in accordance with the standard sampling formulae, that is, approximately in proportion to population, and had the effect of including all 14 cities with populations in excess of 500,000 and a decreasing proportion of the smaller cities.

TABLE 15.—*Distribution of Total Urban Dwelling Units, Total Cities Over 2,500, and Sample Cities, by 6 City-Size Classes*

City size	Number of occupied dwelling units (April 1940) ¹	Total number of cities ¹	Number of sample cities
500,000 and over.....	Millions 6.3	14	14
100,000-500,000.....	4.4	78	14
50,000-100,000.....	2.0	107	7
25,000-50,000.....	2.0	213	7
10,000-25,000.....	2.7	665	9
2,500-10,000.....	3.2	2,387	11
Total.....	20.6	3,464	62

¹ Source: 1940 Census of Population.

For the selection of the 14 sample cities in the size class of 100,000 to 500,000, and the 14 cities in the size class of 50,000 to 100,000, a three-way set of controls based on the following factors was imposed: Region; 1930 median rent and rental value¹³ percentage of families in 1930 which were Negro.

Each of these controls had the effect of specifying the distribution of 14 cities by the differing value of the control. A comparison of the distribution of the total population living in cities 100,000 to 500,000 by region and of the selected sample cities by region is shown in table 16.

The distribution of the sample communities by these regions was obtained in the same fashion as the distribution of all 62 cities among

¹³ At the time the sample was drawn, 1940 rent was not available for most of the cities in the country. Subsequent experiments have shown that the differences between stratifications based upon 1940 and 1930 rents are slight.

city-size classes, that is, approximately in proportion to total urban population in each. Similar distributions of cities and of total populations within this city-size class were obtained by 1930 median rent class and by percentage of population which was reported Negro in the 1930 census. Fourteen cities were then selected completely at random within the limits that they satisfy each of these three criteria. After having imposed these controls, random selection of communities seemed less likely to bias the sample than a system of selecting "typical" or "representative" cities.

For cities of 50,000 to 100,000 the procedure was identical with that just described for selection of cities from 100,000 to 500,000. For the remaining 3 city-size classes the procedure differed only to the extent of an additional control for the presence or absence of the city within a metropolitan area.

As a final control on all the cities with populations below 500,000 a State control was imposed so that each State (or, for the smaller States, each group of States) received the exact number of cities which its urban population justified.

TABLE 16.—*Distribution of Urban Dwelling Units, Total Cities, and Sample Cities, by Region*

CITIES WITH POPULATIONS OF 100,000 TO 500,000

Region	Number of occupied dwelling units (April 1940) ¹	Total number of cities ¹	Number of sample cities
<i>Thousands</i>			
New England.....	423	11	1
Middle Atlantic.....	666	14	2
East North Central.....	879	14	3
West North Central and Mountain.....	689	10	2
South Atlantic.....	296	8	1
East South Central.....	351	6	1
West South Central.....	543	7	2
Pacific.....	559	8	2
Total.....	4,400	78	14

¹ Source: 1940 Census of Population.

APPORTIONMENT OF INTERVIEWS AMONG SELECTED CITIES

In determining the number of consumer units to be interviewed in each city the total number of interviews was distributed among the various region city-size groups on the basis of number of occupied dwelling units in each group in April 1940 as reported by the census. For the cities with population of 500,000 and over the number of interviews in each region so obtained was distributed among all the cities in that region on the basis of the number of occupied dwelling units in each city. For cities under 500,000, the number of interviews in each region city-size group was distributed on the basis of the number of occupied dwelling units in the median-rent group of cities from which the selected city had been drawn. Interviews allocated on this basis yielded a sample which would yield estimates of urban income, expenditure, and saving simply by pooling the schedules collected from all cities without weighting. (The absence of weighting is a great saving in time and hence in cost of preparing over-all figures.) The cities included in the sample, the number of assignments in each, and certain identifying characteristics are given in table 17.

TABLE 17.—*Cities Included in Sample, Certain Characteristics of Each, and Number of Interviews Assigned Each*

City	1940 population	1930 median rent or rental value	1930 percentage Negro	Number of interviews
<i>Thousands</i>				
Akron, Ohio.....	245	\$30.25	3.9	15
Allegan, Mich.....	5	14.24	1.0	20
Asheville, N. C.....	51	23.54	27.4	13
Baltimore, Md.....	859	24.17	17.9	13
Bayonne, N. J.....	79	35.65	2.9	15
Bennettsville, S. C.....	5	14.59	43.3	12
Binghamton, N. Y.....	78	31.81	.9	15
Boston, Mass.....	771	35.22	3.0	11
Brainerd, Minn.....	12	13.83	0	23
Buffalo, N. Y.....	576	32.50	2.3	9
Bryan, Tex.....	12	13.19	36.8	13
Cameron, Tex.....	5	14.02	24.7	22
Chicago, Ill.....	3,397	44.77	6.5	55
Cleveland, Ohio.....	878	33.58	7.9	14
Coalinga, Calif.....	5	20.50	.1	15
Coraopolis, ¹ Pa.....	11	35.07	8.1	19
Daytona Beach, Fla.....	23	21.47	30.0	23
Detroit, Mich.....	1,623	41.76	6.9	25
East Orange, N. J.....	69	61.76	6.0	16
Eldorado, Ill.....	5	7.72	0	20
Elmhurst, ¹ Ill.....	15	43.65	.1	15
Erie, Pa.....	117	28.87	1.0	20
Flagstaff, Ariz.....	5	21.04	3.4	16
Fresno, Calif.....	61	21.92	1.6	19
Highland Falls, N. Y.....	4	25.10	9.8	20
Indianapolis, Ind.....	387	25.28	12.1	16
Kansas City, Kans.....	121	15.32	17.8	23
Kansas City, Mo.....	399	29.42	10.5	17
Kenosha, Wis.....	49	31.24	.4	20
Klamath Falls, Oreg.....	16	26.72	.7	12
Lawrence, Mass.....	84	26.01	.2	17
Los Angeles, Calif.....	1,504	34.16	3.0	29
Memphis, Tenn.....	293	17.98	43.2	21
Michigan City, Ind.....	26	22.32	2.5	21
Milwaukee, Wis.....	587	33.73	1.3	10
Moerbrige, S. Dak.....	3	22.75	.1	15
New Orleans, La.....	495	22.75	30.8	16
Newport, ¹ Ky.....	31	24.37	3.9	12
New York, N. Y.....	7,455	45.70	4.5	119
Oklahoma City, Okla.....	204	28.85	7.4	16
Ogdensburg, N. Y.....	16	16.90	0	19
Opelika, Ala.....	8	13.15	46.4	21
Oradell, ¹ N. J.....	3	39.78	2.0	19
Ottumwa, Iowa.....	32	14.38	1.6	22
Philadelphia, Pa.....	1,931	30.05	11.1	30
Piqua, Ohio.....	16	19.22	2.9	16
Pittsburgh, Pa.....	672	33.80	8.3	10
Pittsfield, Mass.....	50	28.25	1.0	17
Royal Oak, ¹ Mich.....	25	37.60	.1	20
St. Louis, Mo.....	816	30.77	11.0	14
San Diego, Calif.....	203	26.32	1.8	17
San Francisco, Calif.....	635	36.25	.6	12
Savannah, Ga.....	96	16.20	51.7	12
Scranton, Pa.....	140	27.08	.6	19
Southington, ¹ Conn.....	5	22.73	4.6	9
South Portland, ¹ Maine.....	16	23.81	0	18
Spokane, Wash.....	122	18.24	.6	15
Toledo, Ohio.....	282	32.14	4.3	16
Washington, D. C.....	663	42.06	23.9	10
Wichita Falls, Tex.....	45	20.45	12.4	17
Wilmington, Del.....	113	28.69	12.1	20
Worcester, Mass.....	104	30.31	.7	25

¹ Lies within a metropolitan area.² Median rent-rental value for Bergen County.

SELECTION OF FAMILIES WITHIN CITIES

The first step in selecting the families to be interviewed in each city involved the selection of a sample of blocks. For each city with a population above 50,000 the Bureau of the Census has computed the average rent or rental value for each block in the city. For such cities, average block rent in 1940 was used as the basis of stratification for selection of blocks. In each such city the blocks were sorted into a series of rent classes, each rent class having the same number of occupied dwelling units.¹⁴ One block was selected at random from each of these rent classes. As many blocks were selected as there were families to be interviewed. The procedure was such that the greater the number of occupied dwelling units in a block, the greater was the chance of selecting that block. As a result it was possible to select one family per block regardless of the size of the block, and still obtain an unbiased distribution of families by the density of the block in which they live. A comparison of the average monthly rent per block for the sample and for the entire city in each¹⁵ of the cities over 50,000 is shown in table 18.

TABLE 18.—Comparison of Average Monthly Rent Per Block in Sample and in Entire City, for Each Sample City Over 50,000.

City	Number of blocks in sample	1940 average monthly rent		City	Number of blocks in sample	1940 average monthly rent	
		Blocks in sample	Entire city ¹			Blocks in sample	Entire city ¹
Akron, Ohio	15	\$27.78	\$28.33	Memphis, Tenn.	21	\$21.22	\$21.95
Asheville, N. C.	13	25.86	22.18	Milwaukee, Wis.	10	32.50	33.26
Baltimore, Md.	13	30.13	30.31	New Orleans, La.	16	21.67	21.96
Bayonne, N. J.	15	31.97	32.29	New York, N. Y.	119	44.40	43.87
Binghamton, N. Y.	15	32.25	32.81	Oklahoma City, Okla.	16	25.09	25.18
Boston, Mass.	11	31.95	32.74	Philadelphia, Pa.	30	29.91	31.22
Buffalo, N. Y.	9	29.05	30.91	Pittsburgh, Pa.	10	32.81	34.83
Chicago, Ill.	55	33.52	34.47	St. Louis, Mo.	14	25.08	25.75
Cleveland, Ohio	14	28.45	28.93	San Diego, Calif.	17	28.95	30.54
Detroit, Mich.	25	35.28	35.88	San Francisco, Calif.	12	34.78	37.39
East Orange, N. J.	16	58.46	52.69	Savannah, Ga.	12	18.16	18.21
Erie, Pa.	20	26.68	27.49	Scranton, Pa.	19	27.68	27.68
Fresno, Calif.	19	29.52	30.04	Spokane, Wash.	15	24.91	23.95
Indianapolis, Ind.	16	28.24	28.76	Toledo, Ohio	16	28.53	29.46
Kansas City, Mo.	17	26.67	27.44	Washington, D. C.	10	53.43	53.00
Kansas City, Kans.	23	18.29	18.43	Wilmington, Del.	20	36.39	37.75
Lawrence, Mass.	17	24.88	24.44	Worcester, Mass.	25	32.70	32.83
Los Angeles, Calif.	29	37.11	34.50				

¹ Source: 1940 Census of Population.

For cities with populations below 50,000 average block rent has not been computed by the Bureau of the Census, and a somewhat different procedure was therefore necessary. For each such city in the sample a detailed block map was obtained and the blocks on the map

¹⁴ In cities with populations above 500,000 only one-third of the blocks, selected at random, were used in this classification.

¹⁵ At the time that the sample of blocks was being drawn, the census tabulations of average block rent in New York City had not yet been prepared. The procedure followed in that city involved treating each of the 3,000 census tracts in that city in the same fashion as blocks had been treated in other cities. The number of occupied dwelling units in each tract in April 1940 was known. Since average tract rent was unknown, however, the basis of stratification was percentage of rented units renting for less than \$30 in 1934 as shown by the Real Property Inventory. After the sample tracts had all been drawn in the same manner as blocks were drawn in other cities, one block was selected completely at random from each sampled tract.

numbered consecutively. Every nth block was then selected, the initial number being chosen at random. Since adjacent blocks were given consecutive numbers, this procedure had the effect of scattering the selected blocks throughout the city.

The last step in selecting the specific families to be interviewed in the selected cities, involved having the enumerator prepare a complete listing of the families and single consumers living in each of the selected blocks. Each known family or single consumer was listed as a separate unit. These listings were returned to the Washington office of the survey, where the selection of the consumer units to be interviewed was made. In the cities over 50,000 one consumer unit was selected at random from each block listing; in each of the cities under 50,000 the listings for each of the blocks were put together to form one continuous listing. Every nth family was selected from this continuous listing, with the initial number again chosen at random. In the smaller towns some of the blocks thus furnished two or even three families while others furnished none in proper accordance with the density of population within the blocks.

Exactly 1,200 consumer units were assigned from such listing. On occasion it was discovered that an assigned consumer unit actually consisted of two or more independent economic units. This happened most typically when two groups of related persons living together and listed as one family in the initial block listing were discovered on more detailed investigation to keep their incomes and expenditures separate. In such a case, despite the relationship, they are best considered separate economic units. In every such instance each of the independent units was separately scheduled. Any procedure which involved taking only one of the economic families in such a multiple grouping would have yielded a sample with fewer economic families living in multiple groups than existed in the urban population. The procedure followed in the present survey involved scheduling each of the separate economic families composing the assigned family. The 1,200 original assignments thus yielded almost 1,300 economic families of one or more than one persons. In the most extreme case a single assignment yielded four separate economic units.¹⁶

¹⁶ The converse of this case should also be noted. In some few cases two or more members of a single economic family were listed separately and one of the members selected for scheduling. To have scheduled the entire economic family of which the selected individual was a member would have overweighted the sample with such families. The procedure followed involved scheduling the entire family if the selected member was the first in the listing of the members, and drawing another family from the block if he was not.