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cigarettes; from 1950-54, 80 percent. Since World War I the annual consumption of cigarettes per person over 14 has increased by more than 8 pounds, approximately a 6-fold increase. About

41 percent of this increase may be regarded as additional tobacco consumption, the remaining 59 percent as a shift from other tobacco products to cigarettes.

Disposable Income of Farm People

By Frederick D. Stocker

The United States Department of Agriculture publishes regularly a variety of estimates that measure the overall income position of farming and farm people. During the last decade and a half, however, the tremendous growth in Federal income taxes has clouded the significance of many of the before-tax figures on farmers' incomes. In this paper, the author attempts to measure the income that remains to farm people after payment of income and other personal taxes.

BEFORE WORLD WAR II, income taxes paid to the Federal Government amounted to only a small proportion of total personal income. The amount paid by farmers was so small as to be negligible, and for the population at large it came to only about 1 percent of personal income. But by 1954, this proportion had grown to just under 10 percent. In the industrial sectors of the economy, the rise in Federal income-tax payments has been accompanied by increased emphasis by workers on take-home pay. Economists too have given more attention to disposable income as an indicator of consumer demand and as a standard of well-being.

Although farm income is not in general subject to income-tax withholding, the magnitude of the payments forces many farmers to think and plan in terms of their disposable income. Development of a satisfactory measure of farmers' disposable income, however, has depended on the availability of estimates of the Federal income taxes paid by this group. Recently, estimates of this kind have been developed, covering the period from 1941 to 1955.¹

The purpose of this paper is to utilize these figures, in combination with estimates of other personal tax and nontax payments of farmers and with published statistics on farm income, to ascertain the disposable income of the farm population. Such estimates offer a more refined meas-

ure of the income farm people have available for buying consumer goods or farm equipment, for retiring debt, or for adding to their liquid savings. In this respect, disposable income is a useful indicator of how well off farm people are. It is, moreover, an important figure to those who sell things to farmers—especially such things as farm equipment—because of the great influence disposable income has on the strength of the farmers' demand for the products of industry.

Disposable Income—the Concept

Disposable income, as the term is used in the national income accounts of the Department of Commerce, is found by subtracting personal income taxes and certain other personal tax and nontax payments from personal income. Personal income taxes include, in addition to those paid the Federal Government, the amounts paid to States and to local subdivisions. Other personal tax and nontax payments include State and Federal estate or inheritance taxes, poll taxes, property taxes paid on personal belongings, fines, and miscellaneous charges.²

Federal Income Taxes

For the farm population, as for the population at large, Federal income tax payments make up the overwhelming bulk of all personal tax and

¹ See STOCKER, FREDERICK D., THE IMPACT OF FEDERAL INCOME TAXES ON FARM PEOPLE, U. S. Dept. Agr., Agr. Res. Serv., ARS 43-11, July 1955.

² Further detail on the items included in the category "personal tax and nontax payments" is given in U. S. DEPARTMENT OF COMMERCE, SURVEY OF CURRENT BUSINESS, NATIONAL INCOME, 1954 EDITION (special supplement), table 8, pp. 170-171.

nontax payments. In calendar year 1954, for the entire population, seven-eighths of these payments were accounted for by Federal income taxes (less refunds). The Federal Government collected about \$28.2 billion in personal income taxes in that year. Of this, \$1.4 billion came from farm people.

Fluctuations Are Significant

But the full significance of Federal income taxes as a determinant of farmers' disposable income is not revealed in the magnitude of these payments. Their great year-to-year variations give them unique importance. The following tabulation of Federal income taxes paid by farm people reveals a rapid increase during the war years from \$15 million in 1941 and a negligible amount before that, to \$1,090 million in 1945. Since the end of World War II these payments have fluctuated within wide limits. They reached a high of \$1,430 million in 1954 and a low of \$825 million in 1950.

Year of payment	Tax ¹	Year of payment	Tax ¹
	<i>Million dollars</i>		<i>Million dollars</i>
1941-----	15	1949-----	965
1942-----	85	1950-----	825
1943-----	400	1951-----	865
1944-----	880	1952-----	1, 185
1945-----	1, 090	1953-----	1, 400
1946-----	1, 060	1954-----	1, 430
1947-----	995	1955-----	1, 120
1948-----	1, 365		

¹ Figures rounded to nearest \$5 million. Payments primarily on income received in preceding year.

Probably the basic cause of these fluctuations lies in the inherent instability of farm cash incomes. But the variations are amplified by the "built-in flexibility" of the Federal income tax. Because of the graduated rates, variations in income tax payments of such a group as the farm population are more than proportional to the accompanying fluctuations in income. Moreover, because so many farm families receive incomes in the neighborhood of the exemption level, even small changes in farm income may have the effect of adding to or removing from the tax base a large part of the income of the farm population.

This does not take into account the variation in tax payments that can be attributed to statutory

changes in the rate schedule of the Federal income tax. During the 15-year period covered in the tabulation, tax rates were increased in 8 years, and reduced in 3 years. The rate schedule that had been applicable to income of the preceding year was retained in only 4 years.

Other Personal Tax and Nontax Payments

Federal income taxes, as noted, account for about seven-eighths of all personal tax and nontax payments by the entire population. The rest is made up of a number of minor items, largest of which are Federal estate and gift taxes and State taxes on personal income. Each of these accounted for about a billion dollars of payments by the population at large in 1954. The items included, and the total paid in 1954, as reported by the Department of Commerce, are shown in the following tabulation:

	Million dollars
Federal:	
Estate and gift taxes-----	921
Nontaxes ¹ -----	64
State and local:	
Income taxes-----	1, 098
Death and gift taxes-----	265
Motor vehicle licenses-----	445
Property taxes on personal belongings-----	310
Other taxes ² -----	196
Nontaxes ¹ -----	1, 366

¹ Includes certain charges for government products and services, such as tuition and hospital fees; fines and penalties; donations; and special assessments paid by unincorporated business, including home owners.

² Consists of poll taxes and miscellaneous licenses and permits.

It is difficult to prepare a precise estimate of the share of each of these that is paid by farm people. But such refined estimates are probably unnecessary. Some of these payments, such as farmers' Federal estate taxes, are probably so small as to be negligible. State income taxes doubtless have a heavy impact on some farm people in certain States, but in the overall view they amount to very little and may also be disregarded. Of the other types of payment, none involves an amount large enough to exceed the margin of error inherent in the estimates of Federal income tax payments of farm people.

How Estimated

It seems best, therefore, to estimate these payments each year as a single package. A convenient method, and one that gives results that appear to be reasonable, is to assume for some recent year that the proportion of total personal tax and nontax payments accounted for by Federal income taxes is the same for the farm population as it is for the entire population. For some components, such as motor vehicle licenses and certain nontaxes, the proportion paid by farmers is probably greater than the corresponding proportion of Federal income taxes. For others, notably Federal estate and gift taxes and State and local income taxes, the proportion is probably smaller. On balance, therefore, the assumption of equality between the proportion of the total paid by farmers and that indicated for Federal income taxes appears to be reasonable.

In 1954, according to Department of Commerce estimates, Federal income taxes accounted for all except 12 percent of the national total of personal tax and nontax payments. The figure for other recent years is almost the same. On the assumption that similar proportions obtain for the personal tax and nontax payments of farm people, a benchmark estimate may be prepared showing the personal tax and nontax payments (other than Federal income taxes) made by farm people in 1954.

It seems undesirable, however, to estimate these "other" payments each year by reference to the corresponding total of farmers' payments in Federal income taxes. The increase in income tax payments since 1941 has been far greater than the increase in "other" payments. Between 1941 and 1954, Federal income tax payments of the farm population increased about 94 times (9,400 percent), and those of the entire population 17 times (1,700 percent). During the same period, "other" personal tax and nontax payments by the entire population increased by only 175 percent.

A better guide to the year-to-year change in other payments by farmers appears to be the change in these payments per capita of the population at large. Starting from the 1954 benchmark, and using the assumption that changes in per capita payments of the farm population are proportional to those of the entire population, we

TABLE 1.—*Personal income, personal tax and nontax payments, and disposable income of the farm population, 1941-54*

Year	Net personal income ¹	Federal income tax payments ²	Other personal tax and nontax payments	Net disposable income
	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>
1941-----	10, 555	15	85	10, 455
1942-----	14, 874	85	95	14, 694
1943-----	17, 448	400	95	16, 953
1944-----	17, 752	880	100	16, 772
1945-----	18, 221	1, 090	110	17, 021
1946-----	21, 021	1, 060	115	19, 846
1947-----	22, 283	995	125	21, 163
1948-----	24, 804	1, 365	140	23, 299
1949-----	19, 851	965	145	18, 741
1950-----	20, 759	825	150	19, 784
1951-----	23, 603	865	160	22, 578
1952-----	23, 055	1, 185	175	21, 695
1953-----	20, 833	1, 400	180	19, 253
1954-----	19, 996	1, 430	185	18, 381

¹ Source: U. S. Agr. Marketing Serv., *The Farm Income Situation*, No. 155, p. 40.

² Based on income of preceding year.

arrive at the estimates shown in column 3 of table 1. Column 4 of this table shows the net disposable income of farm people, after deductions of all personal tax and nontax payments, from 1941 to 1954.

Taxes Offset Farm Income

In 1954, net income of the farm population amounted to \$19,996 million.³ About \$1,430 million of this was paid out in Federal income taxes, and about \$185 million more went for other personal taxes and nontaxes. Disposable personal income of farm people, therefore, amounted to about \$18,381 million in 1954 (table 1).

Table 1 illustrates also the extent to which personal tax and nontax payments, and in particular Federal income taxes, have offset the increase in farm income during the last 14 years. Mainly because of the great increase in Federal income tax payments, the increase in net disposable income of farm people from 1941 to 1954 amounted only to 76 percent. This may be compared with a rise of 89 percent in personal income.

³ Of this, \$12,307 million was received by farm operators from farming, including government payments. Another \$1,989 million was received in farm wages by laborers on farms, and \$5,700 million came from nonfarm sources. See U. S. Agr. Marketing Serv. *The Farm Income Situation*, No. 155, p. 40.

TABLE 2.—*Disposable income of the farm population and of the entire population, 1941-54*

Year	Farm population			Entire population			Column 3 as a percentage of column 6
	Disposable income	Population	Per capita disposable income	Disposable income	Population	Per capita disposable income	
	<i>Million dollars</i>	<i>Thousands</i>	<i>Dollars</i>	<i>Million dollars</i>	<i>Thousands</i>	<i>Dollars</i>	<i>Percent</i>
1941.....	10,455	30,273	345	92,982	133,402	697	49
1942.....	14,694	29,234	503	117,516	134,860	871	58
1943.....	16,953	26,681	635	133,547	136,739	977	65
1944.....	16,772	25,495	658	146,761	138,397	1,060	62
1945.....	17,021	25,295	673	150,355	139,928	1,075	63
1946.....	19,846	26,483	749	159,182	141,389	1,126	67
1947.....	21,163	27,124	780	169,016	144,126	1,173	66
1948.....	23,299	25,903	899	187,601	146,631	1,279	70
1949.....	18,741	25,954	722	188,157	149,188	1,261	57
1950.....	19,784	25,058	790	206,130	151,683	1,359	58
1951.....	22,578	24,160	935	226,069	154,360	1,465	64
1952.....	21,695	24,283	893	236,734	157,028	1,508	59
1953.....	19,253	22,679	849	250,371	159,643	1,568	54
1954.....	18,381	21,890	840	254,814	162,409	1,569	54

TABLE 3.—*Disposable income of the farm population, in current and constant dollars, 1941-54*

Year	Disposable income (current dollars)	Index of prices paid for farm family living (1947-49=100)	Disposable income (constant dollars)	Farm population (April 1)	Per capita disposable income (constant dollars)
	<i>Million dollars</i>		<i>Million dollars</i>	<i>Thousands</i>	<i>Dollars</i>
1941.....	10,455	53	19,726	30,273	652
1942.....	14,694	61	24,089	29,234	824
1943.....	16,953	68	24,931	26,681	934
1944.....	16,772	72	23,294	25,495	914
1945.....	17,021	75	22,695	25,295	897
1946.....	19,846	83	23,911	26,483	903
1947.....	21,163	97	21,818	27,124	804
1948.....	23,299	103	22,620	25,903	873
1949.....	18,741	100	18,741	25,954	722
1950.....	19,784	101	19,588	25,058	782
1951.....	22,578	110	20,525	24,160	850
1952.....	21,695	111	19,545	24,283	805
1953.....	19,253	111	17,345	22,679	765
1954.....	18,381	112	16,412	21,890	750

Some Compensation Evident

By the same process, however, declining farm income is partly compensated for by reduced income tax liabilities. On the basis of income received in 1954, income taxes of farm people are estimated to be \$1,120 million in 1955. This represents a drop of some \$300 million from the all-time peak reached in 1954, based on taxable income received in 1953. This reduction reflects a decline in income subject to tax and the cut in Federal tax rates effective on 1954 income. The resulting decrease in Federal income taxes is equivalent to

an increase of \$55 in the yearly disposable income of the average farm family.

Looked at another way, the decline in Federal income taxes paid by farm people in 1955, taken by itself, has the same effect on disposable income as would an increase of 1½ percent in net personal income of farm people from all sources.

Farm Disposable Income Compared With National

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Looked at another way, the decline in Federal income taxes paid by farm people in 1955, taken by itself, has the same effect on disposable income as would an increase of 1½ percent in net personal income of farm people from all sources.

Farm Disposable Income Compared With National

Because of the sharp decline in farm population, changes in the income position of the average farm

resident or family over the 14-year period covered in the accompanying tables may differ greatly from those suggested by global figures. As shown in table 2, disposable income per capita of the farm population increased from \$345 in 1941 to \$840 in 1954, a rise of 143 percent. During the same period, the increase for the entire population was about 125 percent—from \$697 to \$1,569. But present indications suggest a continued rise during 1955 in the per capita disposable income of the population at large, whereas a drop is anticipated for the farm population. The effect of these changes will probably be to bring disposable income per capita of the farm population to a figure approximately half of the national average.

In table 3, the USDA index of prices paid for farm family living is used to deflate both the aggregate and the per capita amounts of disposable income into dollars of 1947-49 purchasing power. Expressed in these terms, income of the farm population has declined steadily since 1951, and has been below the 1941 level in each year since 1952. The estimate for 1954 shows constant-dollar disposable income of farm people to be about 5 percent below that of 1953 and 17 percent below 1941. On a per capita basis, disposable income in 1954 had a purchasing power well above that of 1941 and slightly greater than 1949, but lower than that of any other year in the period covered.

Economics of Small Watershed Development*

By Harry A. Steele

Passage of the Watershed Protection and Flood Prevention Act has focused attention on the small watershed development program.¹ The strategic problems involved are those that center around management of land and water and the resulting effects on water runoff, soil erosion, and sedimentation. Significant among these problems are those of water-management, which require action by groups of landowners, communities, and local government. Not all small watersheds have significant interfarm problems. Some have problems that can be solved by individual farmers through land-treatment measures and practices. Floodwater retarding structures, levees, floodways, irrigation structures, drainage installations, gully stabilization, streambank control, highway stabilization, and revegetation of critical runoff and sediment-source areas will be needed for watershed development. In planning and installing these types of measures, assistance is available under the Watershed Protection and Flood Prevention Act. This discussion is concerned with the legislative development of the program, its dependence on economic appraisal, and the economic research needed to make it fully effective.

ALTHOUGH there was considerable discussion of upstream measures for control of floods before 1900, one of the earliest acts specifically aimed at this purpose was the Weeks Forest Purchase Act, passed in 1911. This act, later amplified by the Clark-McNary Act of 1924, provided for the acquisition of forest lands at the

headwaters of streams with a view to controlling runoff. The administration of national forests also implied responsibility for flood control and water conservation.² In 1928, the Mississippi Flood Control Act authorized the Secretary of Agriculture to study ways in which forestry might aid control of Mississippi River floods.³

*This paper was given in part at a meeting of the Committee on Water Resources Development, Western Agricultural Economics Research Council, Pullman, Wash., June 27-29, 1955.

¹ Public Law 566, 83d Congress, 68 Stat. 666.

² GRAY, L. C. REPORT ON FLOOD CONTROL SURVEYS, May 1939. Bur. Agr. Econ. (Unpublished.)

³ U. S. DEPARTMENT OF AGRICULTURE, OFFICE OF LAND USE COORDINATION, THE LAND IN FLOOD CONTROL, U. S. Dept. Agr. Misc. Pub. 331, 38 pp., illus.