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SUMMARY

The purpose of this publication is to describe the income characteristics of the rural Wisconsin population and to relate income to a measure of family well-being. Interviews with 1,021 rural Wisconsin families provided data not previously available in this detail. The population studied included farmers, residents of the open countryside, and residents of places of 2,500 population or less not adjacent to a larger city. "Farm" families were those in which one occupation (perhaps the only occupation) of the head was operating a farm; all other families were called "rural nonfarm." Key findings include the following:

(1) Total family income was about the same for the farm and nonfarm families.

(2) Single-earner families earned much less than multiple-earner families among both farm and nonfarm families.

(3) About 33 percent of the wives in rural households earned money income in both farm and nonfarm families.

(4) Household heads earned about the same income whether they were the sole earner or not; in families with more than one earner, the incomes of the spouse and other earners were net additions to family income.

-Almost half (49 percent) of the farm families had an income recipient in addition to the head; spouses and other members contributed almost equally, together accounting for about 33 percent of total income.

-For those 41 percent of nonfarm families which had earners in addition to the head, the wife was the only significant

earner; she earned about 22 percent of the family's income.

(5) Although farm income was still the largest single source of income for Wisconsin farm families, wage and nonfarm business income accounted for more than 42 percent of the income earned by these families.

-About 65 percent of the farm families reported earnings from wages or nonfarm business in addition to farm income.

-On 50 percent of the farms where the head was the sole earner he also received income from wages or a nonfarm business.

(6) About 26 percent of all rural families received Social Security benefits.

A "welfare index," calculated as total family income divided by a measure of subsistence income (i.e., the poverty line), was computed for each family. Using this ratio as a proxy for family well-being, these observations were made:

(1) There were 108,000 rural Wisconsin families near or below poverty level income in 1967, which accounted for slightly more than 22 percent of rural population.

(2) There was a pronounced inverse relationship between the percentage of total farm family income that came from farming and the level of well-being. Net farm income provided 90 percent of total family income for the very poorest farm families but only about 33 percent for those that were the best off.

(3) Transfer income (such as Social Security benefits, pensions, welfare, and annuities) was the most important source of income for the nonfarm poor, accounting for nearly 66 percent of their total income.

-The nonfarm families that were the best off were different from the poor mainly in that substantially more of the heads, spouses, and other family members earned wages and nonfarm business income, and at much higher levels.

(4) The income difference between the poorest farm families and those that were somewhat better off but still below average, is due mainly to higher off-farm labor force participation by both head and spouse and much higher earnings for those working off the farm.

-The difference between the incomes of farm families with slightly below average income and those with above average incomes is due principally to higher wage earnings by head and other earners.

-Within the group of farm families with above average income, higher income levels were mainly associated with larger earnings by the spouse and other family members, not with higher earnings by the head.

(5) There is a pronounced direct relationship between the percentage of families with more than one earner and the level of well-being for both farm and nonfarm families. Those families with more than a single earner had a greater probability of being better-off economically.

The size distributions of income for farm and nonfarm families were determined. The main findings were these:

(1) The inequality of income distribution was about the same for both farm and nonfarm families.

(2) The distribution of the farm income tended to decrease inequality and the distribution of wages and nonfarm business income tended to increase inequality in the distribution of total farm family income.

(3) The distribution of wages and nonfarm business income tended to reinforce inequality in the distribution of total rural nonfarm family income.

(4) The distribution of Social Security and public welfare payments tended to reduce the inequality of total income distribution among both farm and nonfarm families.

A. OBSERVED FAMILY INCOME AND NEEDED FAMILY INCOME

I. INTRODUCTION

There are half of a million families in rural Wisconsin, living in small towns and in the open countryside. About 25 percent of these families receive some income from farming, and the rest depend entirely on nonfarm sources of income. These rural families are a substantial portion of the Wisconsin citizenry.

There is public concern now about the well-being of all the citizens. Much of the attention has been focused on disadvantaged persons in the cities, where problems tend to be highly visible. But awareness of rural problems is developing as well, and is displayed by programs and discussions about rural development, rural poverty, farm income improvement, and rural human development. Whatever the name or particular focus of the activity, all these are basically concerned with human well-being.

Human well-being and the income of the family are closely related, particularly at the lower income levels. As a minimum, basic human needs for food, shelter, and clothing must be met. Every family must have some minimum level of goods and services to allow physical well-being. And in our market-oriented economy, acquiring a stream of goods and services usually requires a stream of money income to pay for them.

Formulation and operation of programs aimed at improving human welfare in rural Wisconsin would be facilitated if more were known about the existing levels of well-being of the residents. If the present situation were more clearly known, planning and implementation could proceed more surely and effectively toward the public objectives. An important

prerequisite for selecting the most effective policy alternatives is first understanding what the problem situation is. Thus, some additional knowledge about the levels of money income in Wisconsin's rural families would help in determining what income problems might exist and the extent to which the rural citizenry is affected; providing this basic policy planning information is the purpose of this research publication.

The research reported here is primarily descriptive in nature. But, where appropriate, the interpretation of the findings includes discussion of the policy and program implications and suggests hypotheses to explain the causality of the present income situation. Included in the discussion are the levels of family income and estimated numbers of rural families affected, the income sources, incomes in single-earner and multiple-earner families, family well-being and income sources, family well-being and earners' shares, income distribution, and the effect of income sources on inequality of income distribution.

RESEARCH PLAN

Secondary data sources contain some information about income and other characteristics relevant to the study of human well-being. These sources are useful and provide starting points for investigating the subject. Usually, the data are aggregated in published reports, however, and details of particular interest may not be visible. Secondary sources may provide information about one or two characteristics of the subject, but be lacking in information about other characteristics that are thought to be of interest. Some other published source that describes the missing characteristics may refer to a slightly different population or in other ways not be directly applicable.

Because of this lack of an exhaustive description of the economic, social, and demographic characteristics of the rural Wisconsin population, a survey was made to obtain the basic data useful to those concerned about human welfare in rural Wisconsin. Because the conditions that cause rural people to be disadvantaged or that are associated with not being well-off were not well-known, the study attempted to acquire information in all areas thought to be relevant. Not all the findings from the survey are reported here. This report focuses primarily on the income of rural Wisconsin families; other aspects are described elsewhere [1,2,3,4].

The survey universe was the heads of households in rural Wisconsin. "Rural" was defined to correspond to the census definition, including farms, residences in the open countryside, and residences in places of 2,500 population or less, excluding the suburbs of larger cities. The sampling unit in the survey was the housing unit (household) which included only the people that lived and ate together and shared common rooms. Because well-being depends both on who there is to earn income and who must be supported by that income, the "family" in this research included other persons residing outside the household that received substantial financial support from household members. This definition of family is more economic than sociologic because there is neither a requirement of blood or legal relationships nor one of living together. The "family" here is the group of persons financially supported by the reported household income. Thus, the earners of income and those that depend on that income for their well-being were studied together.

The sample was drawn and interviews conducted by the Survey Research Laboratory, University Extension, University of Wisconsin. The sample was drawn using a multi-stage probability sampling technique; each

observation had a known probability of being selected. Interviews were completed in 1,021 households but about 5 percent could not be included in this analysis of family income because of incomplete income information. The dropped observations were examined and no basis was found to assume that they were other than a random selection of observations. No bias was assumed or suspected from their elimination [1].

The term "earner" used in this analysis refers to anyone who received income from any source. Some sources of receipts--net farm income, wages, nonfarm business income--suggest an active role for the earner. Others, such as rental income, Social Security benefits, or veterans' benefits suggest a more passive role for the "earner." However, for simplicity, the term "earner" is used in all cases in this report.

The distinction made between "farm" and "rural nonfarm" in this report should also be noted. In this research, a family was considered to be a farm family if the family lived in rural Wisconsin and the head operated a farm and made the major decisions about its operation. No minimum limitation was made in terms of acres farmed, the amount of income earned from farming, or the percentage of total income earned from farming. If the head operated a farm and made the major decisions about its operation, the family was called a "farm" family, regardless of the nonfarm income-generating activities of the head or other family members. If the head only received rental income from the farm in the form of cash or share rent, but did not in fact operate the farm himself, he was not included in the "farm" category. Also, if he worked for wages on a farm operated by someone else, he was called a hired farm worker and was not included in the "farm" category. Thus, "farm" classifies households

on the basis of the occupation of the head. If one of perhaps several occupations of the head was operating a farm, the family was called a "farm" family.

This is a slightly more inclusive definition of farm than that used in the Census of Agriculture, which uses a residence criterion to identify farms instead of the occupational criterion used here. The Census, by contrast, does not consider the following to be farms:

(1) places of 10 acres or more with less than $50 gross sales and

(2) places of less than 10 acres with less than $250 gross sales.

The Census reported 118,815 farms in Wisconsin in 1964 and 98,973 in 1969. By the more inclusive definition used here, the estimated number of farm families was 118,100 in 1967.

II. RURAL FAMILY INCOME

FARM-NONFARM RURAL POPULATION AND INCOME

There were an estimated 491,800 rural families living in Wisconsin at the end of 1967, the time of this study. In about 24 percent of these families the head operated a farm as one (perhaps his only) occupation. Mean family income--the total earned by all family members from all sources--average $6,808 for all the rural families, farm and nonfarm. Mean income for the farm families was about one hundred dollars higher than for the nonfarm families (Table 1).

Some 57 percent of the rural families had only one earner. These single-earner families averaged $5,820 income in 1967, while the multiple-earner families averaged substantially more, $8,141. About 51 percent of the farm families had only one earner and 60 percent of the nonfarm families depended entirely on one person for their income (Figure 1).

The income of the spouse and other family members tended to be a net addition to the earnings of the head, comparing single- and multiple-earner families. The head in the multiple-earner families earned only slightly less than the head in the single-earner families, $5,650 compared with $5,820. Among the nonfarm families, 75 percent of the additional income was earned by the spouse, but among the farm families the additional earnings were earned more nearly equally by spouses and other family members.

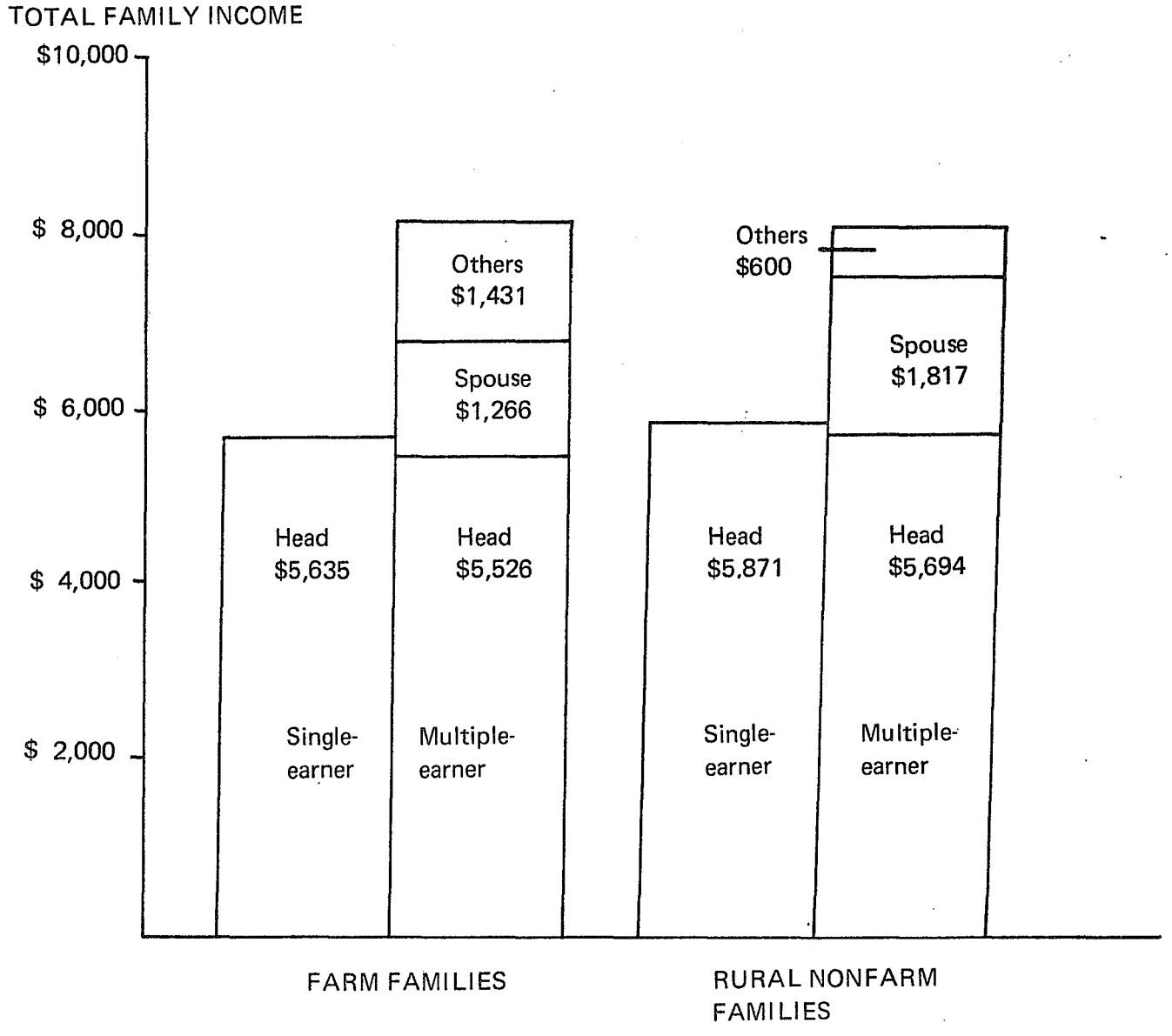
It should be noted that on the farms the income of the head tends to be overstated and that of the spouse and other family members to be understated. This is because there are often opportunities on farms for the spouse or other family members to assist with the farm work and thus contribute to net farm income. There is no simple, entirely accurate way to determine what part of the total farm income was generated by the efforts of the head and what part by efforts of the spouse and other family members if there was not a formal agreement for dividing farm income. The head, being the farm operator, was credited with earning all of the farm income, unless the family had some agreement for dividing it otherwise. This tends to overstate the earnings of the head and to understate those of the spouse and other farm family members, by a like amount. In addition to this known, but not measured, contribution to farm income, the farm spouse and other family members contributed about $2,700 to total family income, about three hundred dollars more than their nonfarm counterparts. Thus, the spouse and other family members were relatively more important contributors of income on farms than among the nonfarm families.

Table 1. Income Characteristics of Rural Wisconsin Families, 1967.

Description	All Rural Families	Farm Families	Nonfarm Families
All rural families			
Estimated number	491,800	118,100	373,700
Mean income	$ 6,808	$ 6,889	$ 6,783
Single-earner families			
Estimated number	282,600	60,600	222,000
Mean income	$ 5,820	$ 5,635	$ 5,871
Multiple-earner families			
Estimated number	209,200	57,500	151,700
Mean income			
Head	$ 5,650	$ 5,526	$ 5,694
Spouse	1,661	1,266	1,817
Other family members	830	1,431	600
Total family	$ 8,141	$ 8,223	$ 8,111

Source: Wisconsin Economic Adjustment Survey [2].

Figure 1. Earnings by family members in farm and rural nonfarm Wisconsin families



OTHER DIFFERENCES BETWEEN THE MAJOR SUBGROUPS

The separation of the population into farm versus rural nonfarm families and into single-earner versus multiple-earner families does not imply that these subgroups are internally homogeneous. While classifying the rural population by farm versus nonfarm, and number of earners was important for purposes of this report, the four subpopulations are quite different from each other in important ways in addition to the characteristics for which they were separated. The reader may wish to consider these differences in his interpretation and use of the data. This report only describes the income characteristics; an explanation of the variation in income among families is attempted elsewhere [1].

In comparing the farm families and rural nonfarm families, note that the mean ages of the heads were about the same (49 years versus 50 years, respectively), but the age distributions were quite different. Only 11 percent of the heads of farm families were age 63 or older compared with 30 percent of the rural nonfarm heads. Farm families were defined in this study to be those in which the head was actively involved in farming. Thus, all families whose head had retired from either farm or nonfarm work fell into the rural nonfarm group. The presence of this large retired component in the rural nonfarm subgroup would tend to lower the mean family income of this group. The income, social, and economic characteristics of older rural Wisconsin residents will be described in detail elsewhere [3].

Heads of farm families completed slightly fewer years of formal education than the heads of rural nonfarm families, 9.3 years versus 10.1 years, which, in itself, would lead one to expect lower incomes for farm families.

Farm families were larger than rural nonfarm families (4.5 persons versus 3.3 persons) and also had more adults present (2.3 adults versus 1.9 adults). Generally, the more family members and adults present, the more potential earners and the larger the potential farm labor supply. However, if the extra persons are elderly or very young their income-producing potential would be minimal, and it might be necessary for a potential earner to remain out of the labor force to care for them. Thus, the effect of more family members and adults on family income is ambiguous.

Very few Wisconsin farm families were headed by a female, while 15 percent of the rural nonfarm families were female-headed. Usually, female heads have fewer employment alternatives and lower average incomes than male heads, particularly if older. Female heads often have sole responsibility for raising children, precluding their working extensively out of the home. In our data, the presence of a larger percentage of female-headed families among the rural nonfarm subgroup is consistent with the larger percentage of single-earner families in that group, 71 percent compared with 58 percent for the farm families. Both of these factors (higher percentages of families headed by a female and with a single earner) would lead to the expectation that family incomes would be lower for rural nonfarm families.

The facts that (1) the rural nonfarm families had a greater incidence of characteristics associated with low income and (2) the mean rural nonfarm family income and farm family income were the same suggests that the young, male-headed families within the rural nonfarm group earned higher incomes than their counterparts in farming.

III. SOURCES OF RURAL FAMILY INCOME

Total family income can be conveniently separated into three types of sources: earnings received for providing labor and management, earnings from assets held, and income from transfers.

Individuals provide their input of labor and management ability into the economy, and for this effort they receive a wage, salary, or the net labor earnings of a farm or other business. The assets they hold and offer to the economy may earn interest, dividends, or rental income or contribute to the earnings of their own business. Transfer income represents the movement of funds to individuals from some other sector of the economy; in the case of a pension fund or annuity that the individual has purchased, it is a transfer through time from a former period. The transfer may be jointly financed by the individual and a public source, such as Social Security benefits. It may be funded entirely from the public sector, such as unemployment compensation, public welfare payments, and veterans' benefits.

In this study, it was determined that family income came from a wide variety of sources; this income is reported by types of sources in Tables 2 and 3. "Wages and proprietory income" included wages, nonfarm business income, net farm income, and the net income from custom machinery work performed by farmers for pay on the farms of others. "Capital income" included farm rental income, interest, dividends, nonfarm rent, and other investment income. "Transfer income" included pensions, annuities, veterans' benefits, public welfare payments, unemployment compensation, and Social Security benefits. Receipts that were clearly a one-time-only transaction were not included in the analysis because a view of the usual

or normal income available to support the family was preferred. Receipts from the sale of real estate or other capital assets, insurance loss proceeds, major gifts, and inheritances were thus excluded.

The importance of a source of income for a rural family can be viewed from two useful perspectives. The first of these involves aggregating the income from all sources for all families and determining what portion of this total originated from each source (Table 2). This shows the importance of each source to the aggregated sector, to all farm families, or to all nonfarm families. This is a valid perspective when used that way, but tends to hide the second perspective: the importance that a particular source may have for those families (perhaps those few families) that do receive that source. For example, public welfare payments and unemployment compensation contributed only $34 on the average, or one-half of 1 percent, to the $6,808 of aggregate income of all rural families from all sources (see Table 2). But for the 3 percent of the rural families that received income from this source, it contributed an average of $1,082 to each (see Table 3). Because families receiving welfare are generally low-income families, that $1,082 probably was very important to them, from their point of view. The first perspective is presented in Table 2 as the aggregated sources of income of rural families. The second perspective is presented in Table 3 as the income sources reported and the mean amount received by those reporting.

AGGREGATED SOURCES OF INCOME

The major source of income for nonfarm families was wages and nonfarm business income, 85 percent of their total income of $6,783. Farm families clearly had two major sources of income--net farm income provided about 49 percent and wages and nonfarm business income provided 42 percent.

Table 2. Aggregated Sources of Income for Farm and Rural Nonfarm Wisconsin Families.

Source	Contribution of Each Source to Mean Family Income					
	All Rural Families		Farm Families		Nonfarm Families	
Wages and proprietory income						
Wages & nonfarm business	75.0%	$5,106	42.4%	$2,921	85.4%	$5,793
Net farm income	12.0	817	48.6	3,347	.1	7
Off-farm custom work	.5	34	2.2	152	.1	7
Capital income						
Farm rental income	1.3	89	.2	14	1.7	115
Interest, dividends, non-farm rent, other investment income	3.7	252	3.5	241	3.7	251
Transfer income						
Pensions & annuities	1.2	83	.1	7	1.6	109
Veterans' benefits	.8	53	.7	48	.8	54
Public welfare, unemployment compensation	.5	34	.1	7	.7	47
Social Security	5.0	340	2.2	152	5.9	400
Mean family income from all sources	100.0%	$6,808	100.0%	$6,889	100.0%	$6,783

Source: Wisconsin Economic Adjustment Survey [2].

Table 3. Income Sources Reported, and Mean Income Received by those Reporting, Farm and Rural Nonfarm Wisconsin Families.

Source	Percent Reporting and Mean Receipts Reported					
	All Rural Families		Farm Families		Nonfarm Families	
Wages and proprietory income						
Wages & nonfarm business	76%	$6,687	65%	$4,525	80%	$7,238
Net farm income	24	3,355	100	3,349	*	4,250
Off-farm custom work	4	979	15	978	*	1,000
Capital income						
Farm rental income	7	1,256	3	352	8	1,375
Interest, dividends, nonfarm rent, other investment income	31	799	36	668	30	848
Transfer income						
Pensions and annuities	7	1,203	1	400	9	1,223
Veterans' benefits	6	968	4	1,218	6	918
Public welfare, unemployment compensation	3	1,082	1	575	4	1,111
Social Security	26	1,331	14	1,088	29	1,368

Source: Wisconsin Economic Adjustment Survey [2].

*Less than one-half of 1 percent of the rural nonfarm families received income from net farm income or off-farm custom work.

Relatively more of the farm families' income came from active sources--wages and proprietory income, 93 percent--compared with 86 percent for the nonfarm families. Nonfarm families relied on transfers for 9 percent of their total income while farm families received about 3 percent from those sources. Net farm income, wages, and nonfarm business income were the major sources of aggregated family income. The importance of the other sources cannot be determined solely from Table 2. The importance of each source to those families receiving income from that source is suggested by the data in Table 3.

INCOME SOURCES AND MEAN AMOUNTS RECEIVED

Most Wisconsin farm families also received income from nonfarm sources. Sixty-five percent received income from wages and nonfarm businesses, averaging $4,525 for those families receiving. Thus, not only did large numbers of farm families have this source of income but also the mean amount received was substantial.

The 15 percent of the farm families that performed off-farm custom work with their machinery averaged $978 for their efforts. Custom work usually involves use of machinery already in use in the farm business and does not require additional investments. The major costs involved are the variable costs of operating the equipment and the opportunity cost to the operator for using his labor in this way.

About 33 percent of all the rural families received capital income and averaged more than $800 from these sources. Farm rental income was a more important source for the nonfarm families than for the farmers. Farmers often try to rent additional land to operate with what they own, rather than rent to others some part of their total holdings. Only

3 percent of the farm families rented out land to others, and they rented it in relatively small parcels, judging from the average amount received.

Very few farm families received income from pensions, annuities, public welfare payments, or unemployment compensation. The mean amount received from these sources was also relatively small. A larger percentage of nonfarm families received income from transfers. About 14 percent of the farm families received income from Social Security, averaging $1,088, compared with 29 percent and $1,368 for the nonfarm families. Transfers in general were less important to the farm families than the nonfarm families.

SOURCES OF INCOME FOR SINGLE-EARNER FAMILIES

In single-earner families, by definition, all income from all sources was reported to have been earned by the head. About 50 percent of the farm families in Wisconsin reported only one earner, an estimated 60,600 farm families that averaged $5,635 income. More of the nonfarm families--about 60 percent--reported only one earner. There were estimated to be 222,000 such families averaging $5,871 income in rural Wisconsin in 1967. There were slightly more rural families with a single earner than with multiple earners, and the single-earner families averaged considerably less income--$5,820 to $8,141 for the families with more than one earner.

The aggregated sources of total family income for farm and nonfarm single-earner families are reported in Figure 2. The single-earner farm families had two major sources of income--net farm income, and wages and nonfarm business income. Wages and nonfarm business income was the one major source of income for the nonfarm earners. The farm families received more than 95 percent of their income from active sources, such as wages,

farm business, and nonfarm business income, compared with 85 percent for the nonfarm families. Transfer and capital income were substantially more important for the nonfarm families.

The income sources reported by the single-earners and the mean income of those reporting, are contained in Table 4. In addition to the involvement of farm operators with their farm business, 50 percent of them earned income from wages or nonfarm business as well and averaged from it $4,017 each. The 11 percent of the farmers who performed off-farm custom work with their machinery averaged $1,175 each from this activity.

Only 5 percent of the farmers received Social Security benefits, while 27 percent of the nonfarm heads received benefits. Both groups averaged about $1,100 from this type of transfer. The other types of transfers that were received by nonfarm families averaged more than $1,000.

Seventy-eight percent of the nonfarmers earned wages or income from nonfarm business and these persons averaged $6,377 from this source.

SOURCES OF INCOME IN MULTIPLE-EARNER FAMILIES

There were 57,5000 multiple-earner farm families and 151,700 multiple-earner rural nonfarm families in Wisconsin in 1967. They averaged $8,223 and $8,111 total income per family, respectively. Although only 43 percent of the rural families had more than one earner, the multiple-earner families accounted for slightly more than half the total family income earned by rural Wisconsin families.

In multiple-earner families, income was reported by the head and at least one other family member. Spouses reported income in 84 percent of

Figure 2. Aggregated sources of income for single-earner farm and nonfarm families.

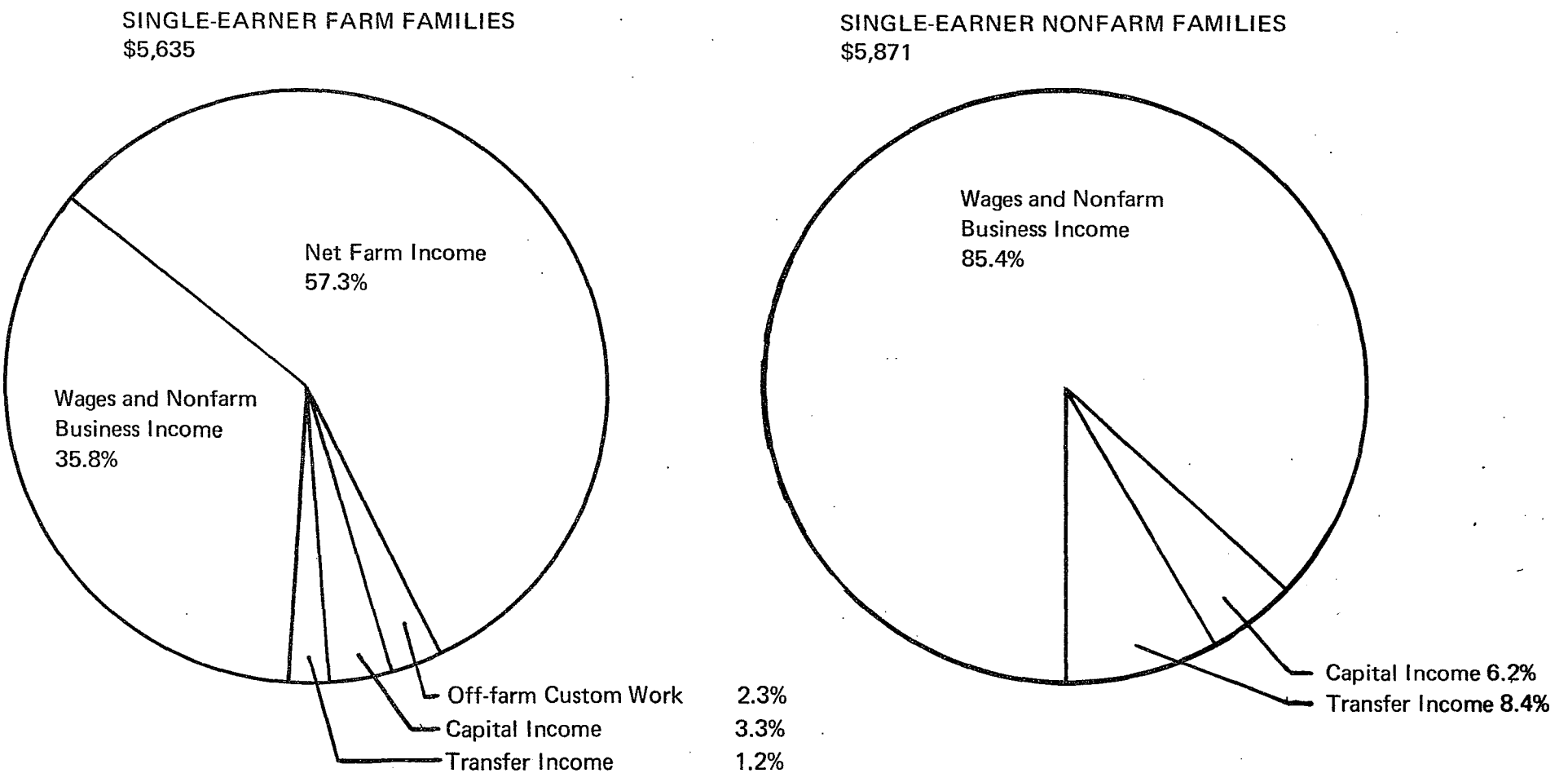


Table 4. Income Sources Reported by Single-Earner Families, and Mean Income Received by Those Reporting.

Source	Percent Reporting and Mean Receipts Reported			
	Single-earner Farm Families		Single-earner Nonfarm Families	
Wages and proprietory income				
Wages and nonfarm business	50%	$4,017	78%	$6,377
Net farm income	100	3,227	†	†
Off-farm custom work	11	1,175	*	1,000
Capital income				
Farm rental income	5	385	8	1,624
Interest, dividends, nonfarm rent, other investment income	32	534	28	818
Transfer income				
Pensions and annuities	1	100	7	1,065
Veterans' benefits	1	1,200	4	1,073
Public welfare, unemployment compensation	≠	300	5	1,241
Social Security	5	1,107	27	1,113

Source: Wisconsin Economic Adjustment Survey [2].

*Less than one-half of 1 percent of the nonfarm families owned machinery and operated that machinery on farm property for hire.

≠ Less than one-half of 1 percent of the farm families received income from public welfare sources or unemployment compensation.

†By definition, nonfarm families do not receive farm income.

the multiple-earner nonfarm families and in 64 percent of the multiple-earner farm families. Other family members--children or parents of the head, other relatives, or unrelated household members--reported income in 32 percent of the nonfarm families and 73 percent of the farm families.

The aggregated sources of total family income for the farm and rural nonfarm multiple-earner families are reported in Figure 3. As with the single-earner families, the multiple-earner farm families had two major sources of income--wages and nonfarm business provided 47 percent of income and net farm income 42 percent. Capital and transfer income were of much less significance for them. The nonfarm families received 85 percent of their income from wages and nonfarm business.

The head contributed most to total family income in both the farm and nonfarm families. But spouses in nonfarm families earned 50 percent more income than did their farm counterparts in terms of aggregated family income (Table 5). This was partly because the nonfarm spouses earned a little more per person than did the farm spouses, but was mainly because a much larger percentage of the nonfarm spouses earned income--84 percent of the nonfarm spouses compared to 64 percent of the farm spouses. The other family members contributed much more to aggregate farm family income than they contributed to nonfarm family income--$1,431 in the farm families to $600 in the nonfarm families. This was almost entirely because a much larger percentage of other family members earned income in the farm family, compared to the nonfarm family. The average amount earned was essentially the same whether the person was farm-based or non-farm-based. These other family members contributed more than the

Figure 3. Aggregated sources of income for multiple-earner farm and nonfarm families.

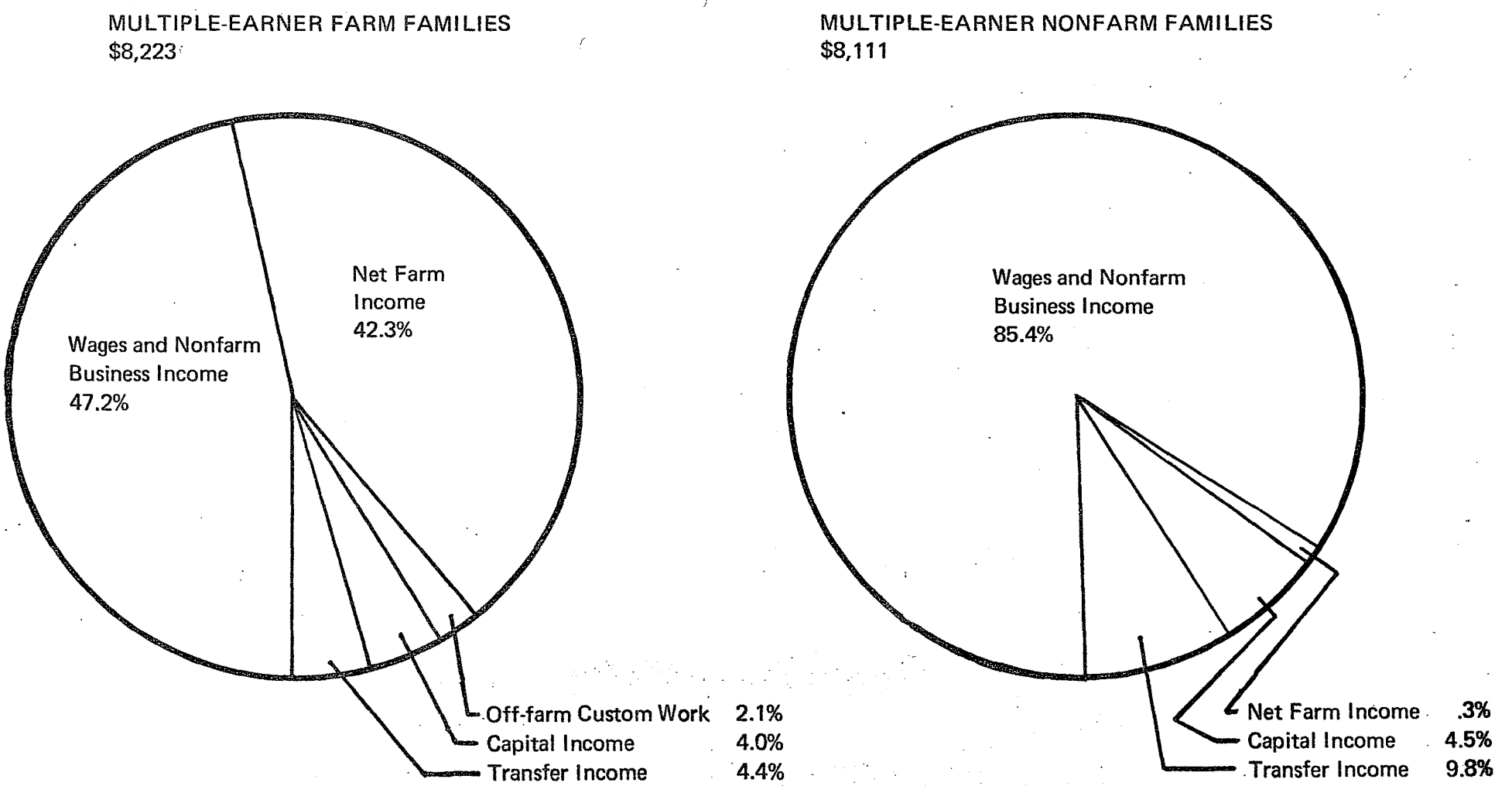


Table 5. Aggregate Sources of Income for Multiple-Earner Farm and Rural Nonfarm Wisconsin Families.

Source	Contribution of Each Source to Mean Family Income					
	Farm Families			Nonfarm Families		
	Head	Spouse	Other Family Members	Head	Spouse	Other Family Members
Wages and proprietory income						
Wages & nonfarm business	$1,703	$1,181	$ 998	$4,804	$1,651	$ 472
Net farm income	3,259	21	198	†	*	24
Off-farm custom work	171	2	*	*	*	*
Capital income						
Farm rental income	8	*	*	81	*	*
Interest, dividends, non-farm rent, other investment income	236	20	65	240	28	16
Transfer income						
Pensions and annuities	8	*	*	139	5	18
Veterans' benefits	68	3	11	70	1	2
Public welfare, unemployment compensation	*	*	8	16	8	*
Social Security	73	39	151	344	124	68
Mean earner income from all sources	$5,526	$1,266	$1,431	$5,694	$1,817	$ 600

Source: Wisconsin Economic Adjustment Survey [2].

*Less than $.50 earned from this source by this earner, on the average.

†By definition, head of nonfarm families have no farm income.

spouses to aggregated farm family income (Table 5).

Table 5 provides a useful perspective on how the various family members contributed to aggregated family income, but the situation should be examined from another point of view to judge better the importance of the sources and the earners of income. This is provided by Table 6 which shows income sources, the percentage of the families in which the various members received income from each source, and the mean amount that was received by those earners. In format it is the same as Table 3 and 4.

Three-fourths of the nonfarm heads reported income from wages and nonfarm businesses, averaging $6,275 for those reporting. The heads of farm families that earned income from this source averaged only $3,739 each, reflecting in part that this was not the only occupation of the farm heads. Each head of a farm family, by definition, had at least some involvement in the decision-making and operation of a farm.

For both farm and nonfarm multiple-earner families, the heads earned a larger share of each source of income than their spouses. In most cases the mean income reported by the heads was also higher than for the spouse. Among the multiple-earner farm families, a larger percentage of the spouses reported income from wages and nonfarm businesses than did the heads--50 percent of the spouses and 46 percent of the heads. The heads earned considerably more per person on the average, however.

A larger percentage of the nonfarm wives actively participated in the labor force. Sixty-one percent of the nonfarm wives, compared with 50 percent of the farm wives, earned income from wages and nonfarm businesses. Five percent of the farm spouses had income from capital compared with only 3 percent of the nonfarm spouses, but the latter averaged more than

Table 6. Income Sources Reported and the Mean Income Received by the Heads, Spouses and Other Family Members that Reported, Multiple-Earner Families.

Source	Percentage of Families Reporting and Mean Receipts Reported			
	Multiple-earner Farm Families		Multiple-earner Rural Nonfarm Families	
Wages and nonfarm business				
Head	46%	$3739	76%	$6275
Spouse	50	2364	61	2565
Other family members	45	2162	25	2357
Family	79	4903	83	8326
Net farm income				
Head	100	3255	†	†
Spouse	*	*	†	†
Other family members	11	2116	1	4250
Family	100	3478	1	4250
Off-farm custom work				
Head	18	922	†	†
Spouse	2	100	†	†
Other family members	†	†	†	†
Family	20	860	†	†
Farm rental income				
Head	2	260	8	917
Spouse	†	†	†	†
Other family members	†	†	†	†
Family	2	260	8	917
Interest, dividends, nonfarm rent, other investment income				
Head	40	605	30	740
Spouse	5	385	3	890
Other family members	4	1483	8	481
Family	41	780	33	865
Pensions and annuities				
Head	1	1000	13	1196
Spouse	†	†	1	733
Other familymembers	†	†	2	1071
Family	1	1000	13	1392
Veterans benefits				
Head	5	1407	8	836
Spouse	1	400	*	*
Other family members	1	966	*	*
Family	7	1222	9	804
Public welfare payments, unemployment compensation				
Head	†	†	3	505
Spouse	†	†	1	700
Other family members	1	666	*	100
Family	1	666	3	763
Social Security				
Head	10	725	29	1150
Spouse	8	486	19	641
Other family members	18	817	10	737
Family	24	1084	32	1649
Total household income				
Head	100	5526	100	5694
Spouse	64	1984	84	2155
Other family members	73	1966	32	1920
Family	100	8223	100	8111

Source: Wisconsin Economic Adjustment Survey [2].

*Less than .5 percent reported this source of income.

†No one in our sample reported income from this source.

twice as much--$890 to $385 for the farm spouses. Nonfarm spouses generally received transfer payments in larger amounts, and a larger percentage of them received income from this source than the farm spouses. This was particularly true in regard to Social Security benefits, with 19 percent of the nonfarm spouses receiving this kind of transfer and averaging $641 each. This compared with 8 percent of the farm spouses who averaged $486 each.

Family members other than the head or spouse contributed $1,431 to aggregated farm family income, which was 17 percent of total income from all earners from all sources. Among the nonfarm families, they contributed $600 on the average, only 7 percent of their aggregated total. They were particularly active in earning wages and nonfarm income, participating in 45 percent of the farms and in 25 percent of the nonfarm families. They averaged more than $2,000 each in both cases. Eighteen percent of the farm families and 10 percent of the nonfarm families included other family members receiving Social Security benefits. Those reporting this source averaged $817 in the former case and $737 in the latter.

The general picture that emerges is that the nonfarm families earn most of their income from wages and nonfarm businesses with important, but much smaller, amounts also received from Social Security benefits and capital income. The farm families earned about $3,900 from wages and nonfarm businesses and about $3,500 from net farm income, thus having two income sources of nearly equal importance. Social Security and capital income also contributed important but much smaller amounts to farm family income but with an important difference--among the farm families the Social Security was received mainly by family members other

than the head or the spouse. But among the nonfarm families the heads (29 percent of the heads) and the spouses (19 percent of the spouses) were the important recipients of Social Security benefits. A much larger percentage of other family members received income in the farm families compared with the nonfarm families, and their contribution to aggregated family income was substantially more as well.

IV. FAMILY WELL-BEING AND SOURCES OF INCOME

One of the purposes of this study of rural Wisconsin families was to identify the differences in income sources and in the income shares earned by various family members at different levels of family "well-being." This involved developing some measurable index of the well-being of each family, determining the level of well-being of each family by this index, and then arraying the families from lowest to highest levels of well-being for study.

WELFARE INDEX

Any quantifiable measure of human well-being will abstract to some degree from reality, and will not give adequate consideration to all factors entering into well-being for all people. But for study to proceed, it is necessary to develop such indices, recognizing that they have some limitations. The most useful of these indices have been based on the concept that a family of a specified size, place of residence, and age will need to purchase some minimum quantity of the necessities of life and that the cost can be estimated for that package. This dollar cost then becomes a guideline against which to compare the income received by families of that particular type. Those families that receive just enough income to buy the minimum quantities of necessities

are said to be less well-off than other families whose income is (say) 150 percent of that minimum. And those are in turn less well-off than the families who receive (say) 200 percent of the minimum.

The costs of the minimum package of family necessities used in this research were those developed by the Social Security Administration [5] and represent the poverty line in family income. The poverty line is the amount of money that any given family requires to provide its members with a very minimal type of subsistence, on the average, and is a function of the family size, whether or not they live in a farm or nonfarm residence, the sex of the head, and, in some cases, the age of the head. The poverty line was computed by the Social Security Administration by determining the cost of a "nutritionally adequate but sparse" diet for families of specified sizes and multiplying this food budget by a factor of three to cover essential nonfood expenditures such as clothing, housing, and health. A downward adjustment was made in resulting poverty lines for farm families to reflect the lower cash cost of living on farms compared to the cash cost for nonfarm families. These poverty lines were calculated for families of different sizes, compositions, and farm and nonfarm residences, and are reported in Table 7. For example, a male-headed farm family with five members required income of $3,431 to live at the poverty line as defined by these standards; or a family composed of only one woman over age 65 and living alone in a nonfarm residence required $1,597 income per year to be at the poverty level.

A "welfare index" was calculated for each family included in this research by dividing the family's total household income by the poverty

line appropriate for that family from Table 7:

$$\text{Welfare Index} = \frac{\text{Total Family Income}}{\text{Poverty Level Income}}$$

Thus, the farm family with five members that earned $3,431 in 1967 would have a welfare index or ratio of 1.0, signifying that the family's income was exactly at the poverty level. If the same-sized family earned $6,862 from all sources, their welfare index would have been 2.0, for example. Families with the same welfare index were considered to be equally well-off, forming relatively homogeneous groups.

The families were arrayed from the lowest welfare index to the highest. To facilitate comparisons among levels of welfare indices, it was necessary to group the observations. Instead of grouping by deciles or other arbitrary means, the observations were grouped into homogeneous subgroups using analysis for the detection of interaction effects [6]. The welfare index of each individual was used as the independent variable, and the observed total family income as the dependent variable. The subgroups were selected by separating the array into segments that were homogenous in relation to the dependent variable. The resulting subgroups were homogeneous in the sense that the variance in total family income within each subgroup is less than it would be under any other set of subgroupings.

Subgroups were occasionally combined in the remainder of this analysis where the presentation is facilitated and no information is lost by doing so. The estimated number of rural families in Wisconsin by welfare indices is presented in Table 8. Here, as elsewhere in this publication, the families with incomes 20 percent above the poverty line

Table 7. Poverty Level Incomes Based on Minimal Family Needs, 1967.

Family Size	Age of Head	Nonfarm Families		Farm Families	
		Male Head	Female Head	Male Head	Female Head
1	under 65	$1,799	$1,662	$1,529	$1,413
1	over 65	1,613	1,597	1,371	1,357
2	under 65	2,251	2,153	1,913	1,830
2	over 65	2,017	2,011	1,715	1,709
3	all ages	2,674	2,573	2,264	2,168
4	all ages	3,412	3,393	2,907	2,882
5	all ages	4,022	3,984	3,431	3,438
6	all ages	4,517	4,497	3,852	3,808
7 or more	all ages	5,562	5,433	4,720	4,667

Source: U.S. Bureau of the Census, "Current Population Reports," Series p. 23, No. 28, "Revision in Poverty Statistics, 1959 to 1968." 1969.

and less (with welfare indices of 1.2 and less) are referred to as "the poor." Families with welfare indices from 1.3 to 2.1 are called "the near-poor" and are, in general, the remainder of the families with below average income in rural Wisconsin. The families with welfare indices of 2.2 and higher are called "average income and above." Using welfare index criterion, there were estimated to be 108,000 poor families in rural Wisconsin in 1967 of which 58,600 had income below the "poverty line." There were an additional 155,500 near-poor families with below average incomes. At the very top of the array were 14,500 families whose family income was more than five and one-half multiples of the poverty level.

SOURCES OF INCOME AND FAMILY WELL-BEING

The percentage of family income received from major sources by welfare indices is presented for farm families in Figure 4 and for nonfarm families in Figure 5.

Farm Families. For the very poorest farm families, net farm income was the most important source of income, providing more than 90 percent of total family income. For farm families at about the poverty line, net farm income was about 75 percent of total family income. Farm families with incomes about twice the poverty level received 50 percent of their family income from farming; the families that were the best off, in terms of a high welfare index, earned about 33 percent of their total family income from farming.

The existence of this group of very poor farmers with very little nonfarm income can be easily overlooked in the aggregated data in published reports. In the most recent agricultural census year for which

Table 8. Estimated Number of Rural Wisconsin Families by Welfare Index and Mean Income, 1967.

Welfare Index	Farm Families		Nonfarm Families		All Rural Families
	Mean Income	Number	Mean Income	Number	Number
The poor					
0.1 - 0.9	$1,982	9,400	$1,748	49,200	58,600
1.0 - 1.2	3,560	14,700	3,413	34,700	49,400
Near-poor					
1.3 - 1.8	5,190	30,800	5,416	81,500	112,300
1.9 - 2.1	7,059	11,100	6,449	32,100	43,200
Average income and above					
2.2 - 2.9	8,252	21,800	7,684	72,800	94,600
3.0 - 4.1	9,720	17,800	9,872	68,000	85,800
4.2 - 5.4	10,653	8,700	11,367	24,700	33,400
5.5 - 8.0	15,388	3,800	15,947	10,700	14,500
Total Families		118,100		373,700	491,800

Source: Wisconsin Economic Adjustment Survey [2].

data are available, average income from all sources for all farms in the United States with sales of $2,500 or less was $5,093. Of this, $954 came from farming and $4,139 from off-farm income [7]. But 27 percent of these farms with sales of $2,500 or less received no income from nonfarm sources [8]. It is farmers in this situation, with little net farm income and without nonfarm income, who emerge so clearly in Figure 4 with very low welfare indices and with a large percentage of their total income received as net farm income.

This inverse relationship between the percentage of total family income that came from net farm income and the level of well-being was one of the most striking findings in this study. Routes to higher income that are often suggested for farm operators are to expand the size of the farm business and/or reduce the costs per unit of output while maintaining the present size. Farm families have apparently added a third route--adding income from nonfarm sources to farm income.

This finding is consistent with those of a study of open country residents of the states of Michigan, Wisconsin, Illinois, Ohio, and Indiana. Fitzwilliams found that for this group the incidence of poverty was greatest among the aged, the disabled, and those small farmers (with gross sales of less than $10,000) who made farming their major source of earned income [9].

The nonfarm sources of most significance for farm families was income earned from wages or nonfarm businesses. Among the poorest farmers this source was about 10 percent of total family income. At the poverty line it was about 20 percent; at twice the poverty line it was 40 percent of total income, and accounted for more than 50 percent total family income among the families that were the best off.

Figure 4. Percentage of household income from major sources, by welfare index, for Wisconsin farm families.

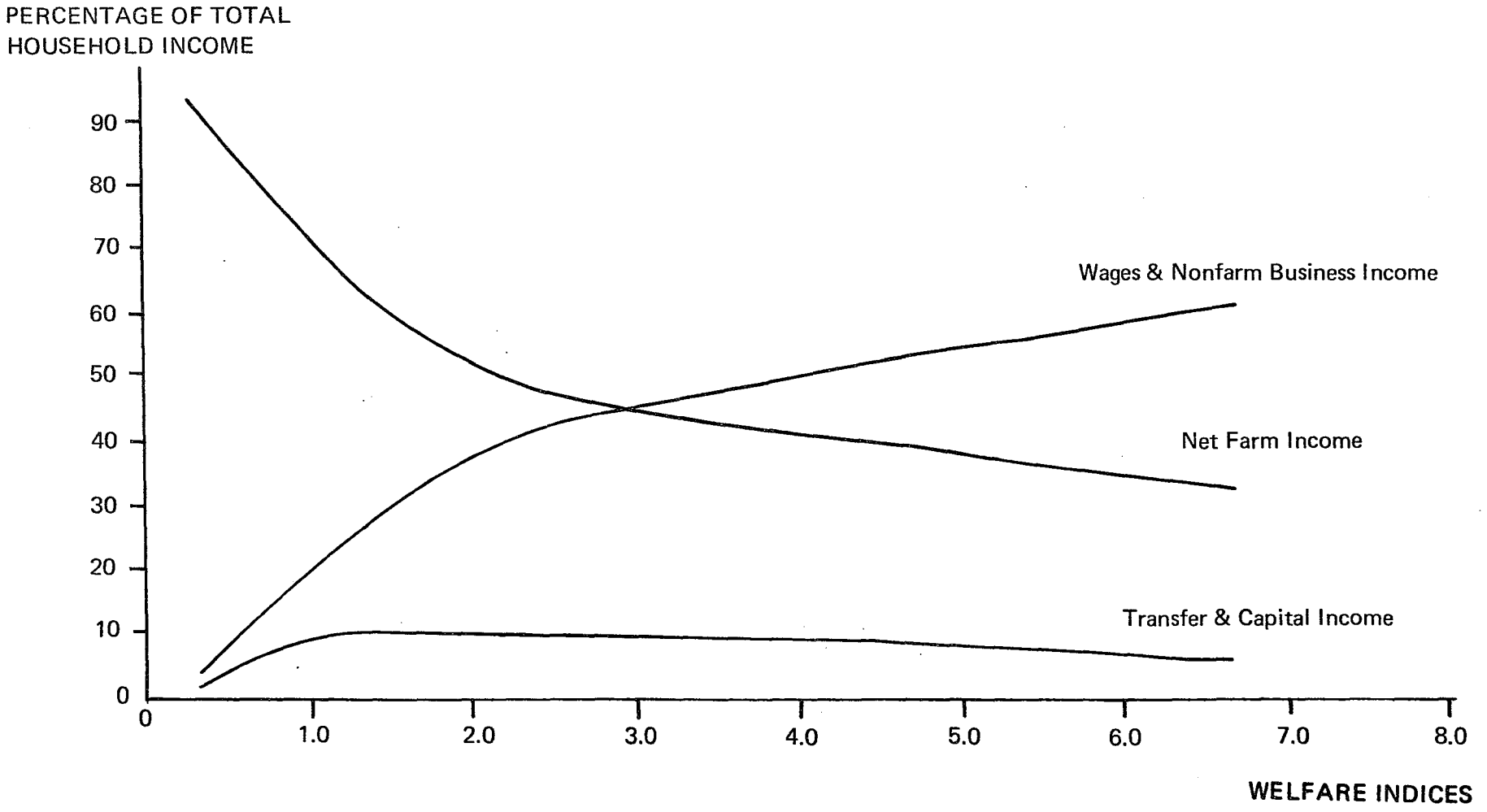
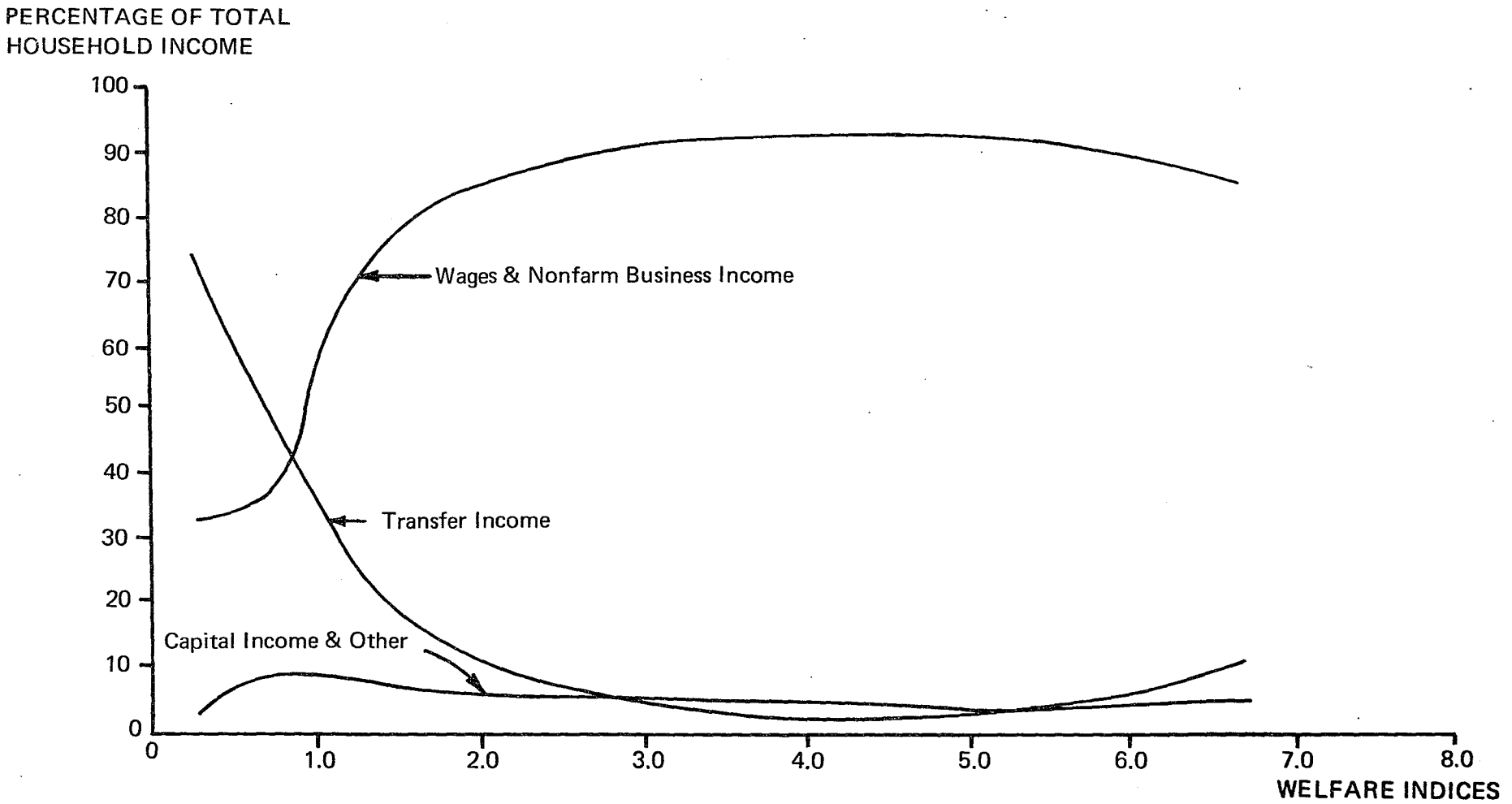


Figure 5. Percentage of household income from major sources, by welfare index, for Wisconsin rural nonfarm families.



Nonfarm Families. Among the rural nonfarm families (Figure 5) the most striking pattern was that transfer income was a very substantial percentage of total family income for the very poor, being nearly 66 percent of their total income. It was more than 50 percent of the total family income for families just under the poverty level income, and about 33 percent for those just over that level. For families whose incomes were twice the poverty line, income transfers made up only 10 percent of total family income, and were generally less than that for families that were better off. Social Security was the largest component of transfer income among the poor and near-poor, about 66 percent of all the transfer income. Public welfare payments and unemployment compensation were very important for the families below poverty level income and insignificant for those above. Veterans' benefits were about 3 percent of total income for the poor and near-poor, but less than one-half of 1 percent for those that were better off. Pensions and annuities made up nearly 6 percent of total income for families below the poverty line and about 1 percent for those above.

Nonfarm families in the group just below the "poverty line" received about $1,100 per family in transfer income, while the families whose income was from 1.0 to 1.2 of the poverty line received about $1,000 in transfer income. The major reason the families above the poverty line were better off was that, in addition to the transfer income, they received income from other sources as well, primarily in the form of wages or nonfarm business income. The extreme dependence of the very poor nonfarm families upon transfer income, particularly Social Security, was a second significant finding of this research.

LEVELS OF INCOME AND FAMILY WELL-BEING

Levels of income by welfare index are presented for farm families in Figure 6 and nonfarm families in Figure 7.

The very poorest farm families averaged about $1,500 total family income from all sources, of which about $1,400 was earned from farming. Farm families just below the poverty line averaged about $2,300 income from all sources, and those just above the line averaged about $3,600. The differences in total family income between families at higher welfare indices and those at lower welfare indices was more a function of more income received by the family from wages and nonfarm business than more income from the farm business. For example, farm families just above the poverty line received about $2,600 from farming and $700 from wages and nonfarm businesses. The farm families whose total income was five multiples of the poverty line received about $4,200 income from farming, about 60 percent more than those at the lower level. But they received about $5,600 income from wages and nonfarm businesses, eight times as much as at the lower level of family income. The information presented in Figure 6 supports this point--that in moving from the groups with lower welfare indices to those with higher indices, the absolute change in dollars was much greater for wages and nonfarm business income than for net farm income.

Among the nonfarm families (Figure 7) the absolute importance of transfer income to the poor and near-poor families is again demonstrated. The very poorest families received about $1,100 total family income, of which about $700 was transfer income. The families with income just below poverty level received $1,100 of their total income of $2,100 from transfers, and those just above the poverty line received about $1,000

Figure 6. Major aggregated sources of farm family income, by welfare index.

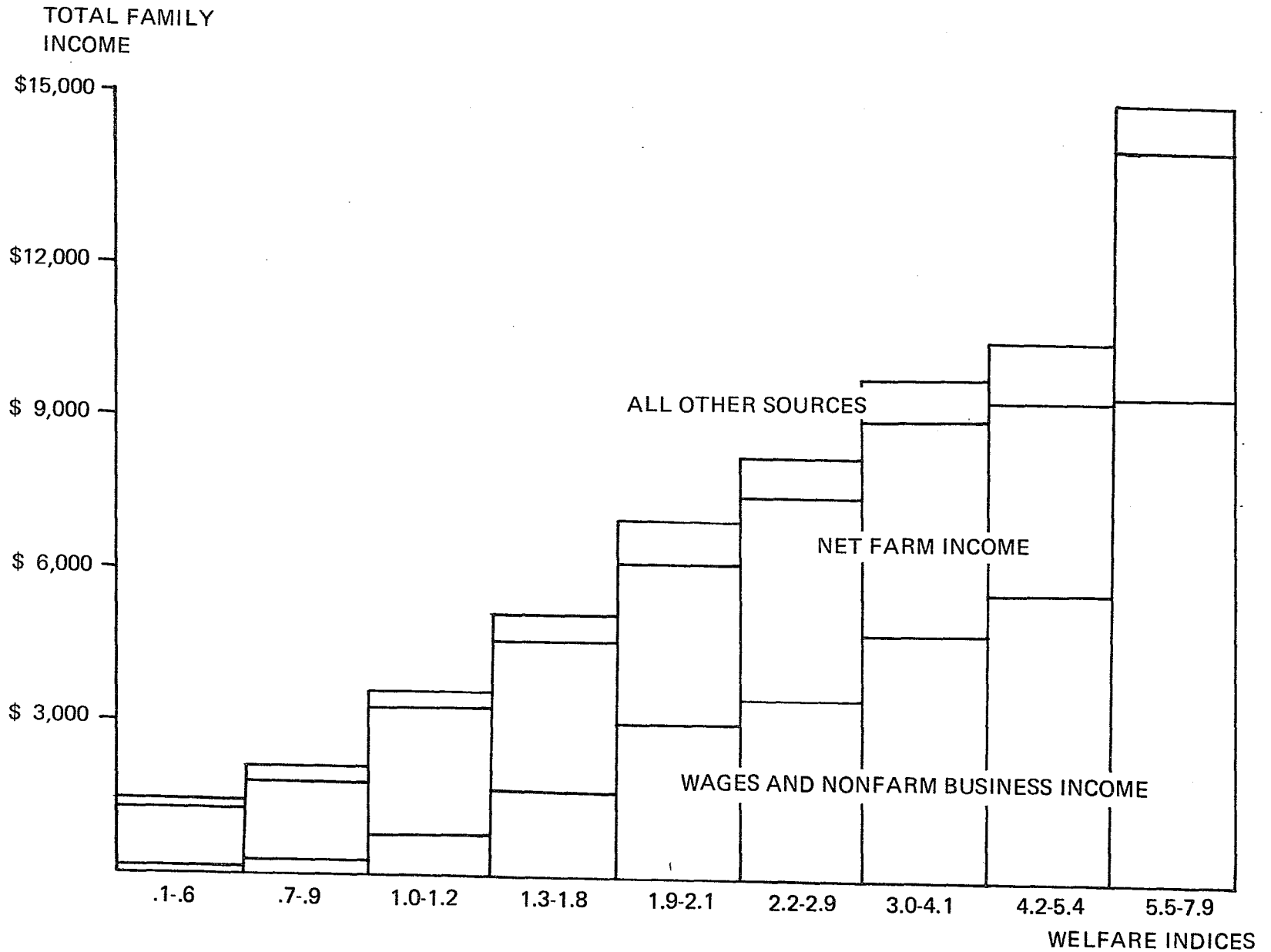
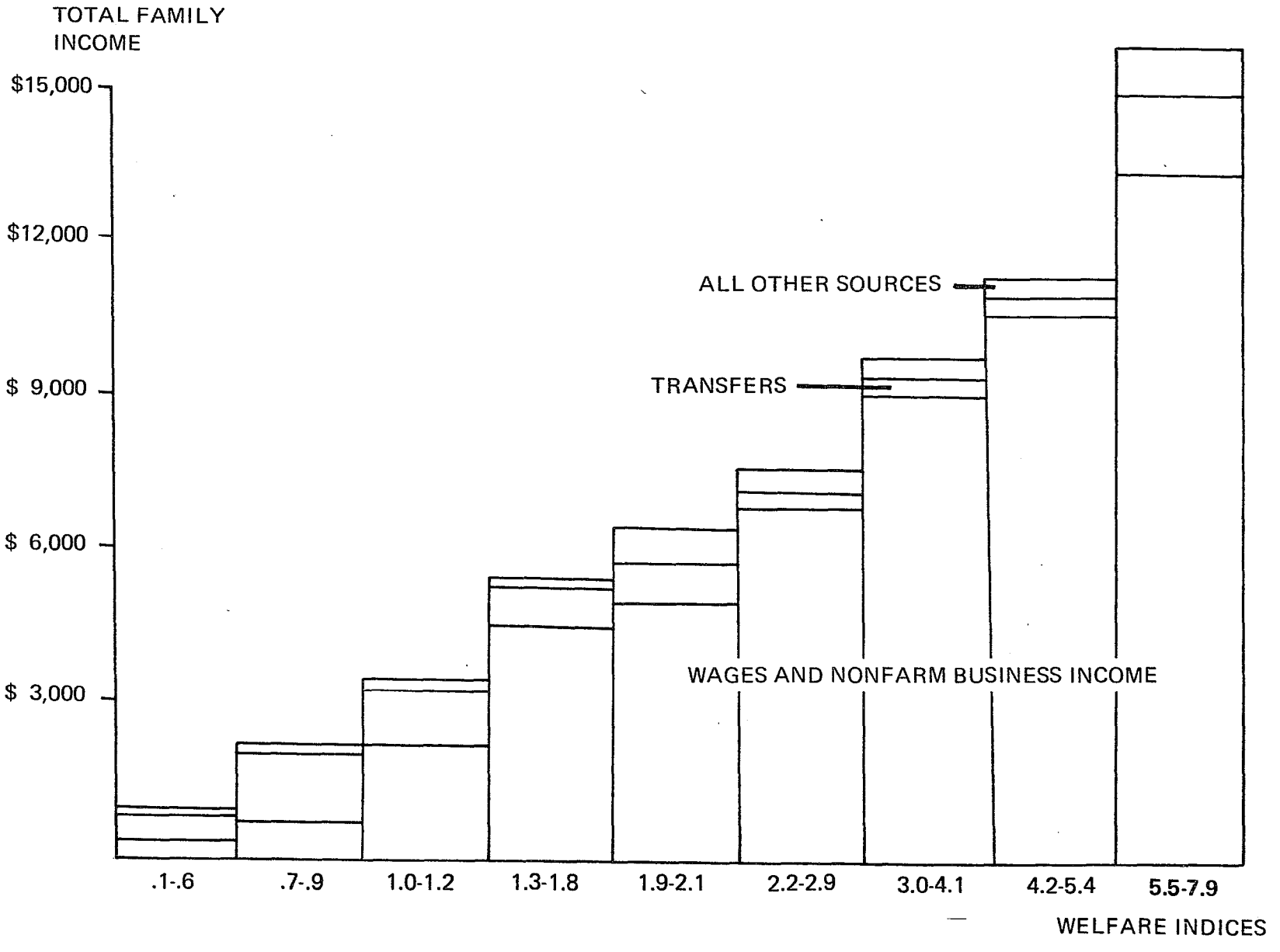


Figure 7. Major aggregated sources of nonfarm family income, by welfare index.



out of their $3,400 total income from transfers. The great importance of wages and nonfarm business income to these nonfarm families is emphasized in viewing the families from lower welfare indices to higher. The families that earned total income that was from two to five multiples of the poverty line had very little income from any source other than wages and nonfarm business income.

V. INCOME SOURCES, EARNERS' SHARES, AND FAMILY WELL-BEING

In the introduction it was shown that the mean family income for families with more than one earner was higher than for families depending solely on one earner. Also, among the rural nonfarm families the spouse was the major second earner, but among the farm families the spouses and other family members contributed more nearly equally to family income. In general, the heads in families with more than one earner earned only slightly less income than the heads in single-earner families; the earnings of the spouse and other family members were more or less net additions, on the average (see Table 1).

The effect on family welfare of having more than one earner is highlighted in Table 9. It can be seen that there is a direct relationship between the level of welfare and the presence of more than one earner in a family.

Beyond this general picture, it is of interest to determine the pattern of earnings in the multiple-earner families. What are the important sources of income for the family members other than the head? What differences are there between families that are well-off and those with very low income, regarding who in the family earns income and from what sources? Are there important differences

Table 9. Percentage of Rural Wisconsin Families with More Than One Earner, Farm and Nonfarm, by Level of Welfare.

	POVERTY INDEX							
	0.1-0.9	1.0-1.2	1.3-1.8	1.9-2.1	2.2-2.9	3.0-4.1	4.2 & Above	All
Farm families %	22	25	43	50	57	71	61	49
Nonfarm families %	26	29	31	37	42	57	64	40

Source: Wisconsin Economic Adjustment Survey [2].

between farm and nonfarm families? This section provides insights and data about these relationships. The farm families are discussed first and then the rural nonfarm families.

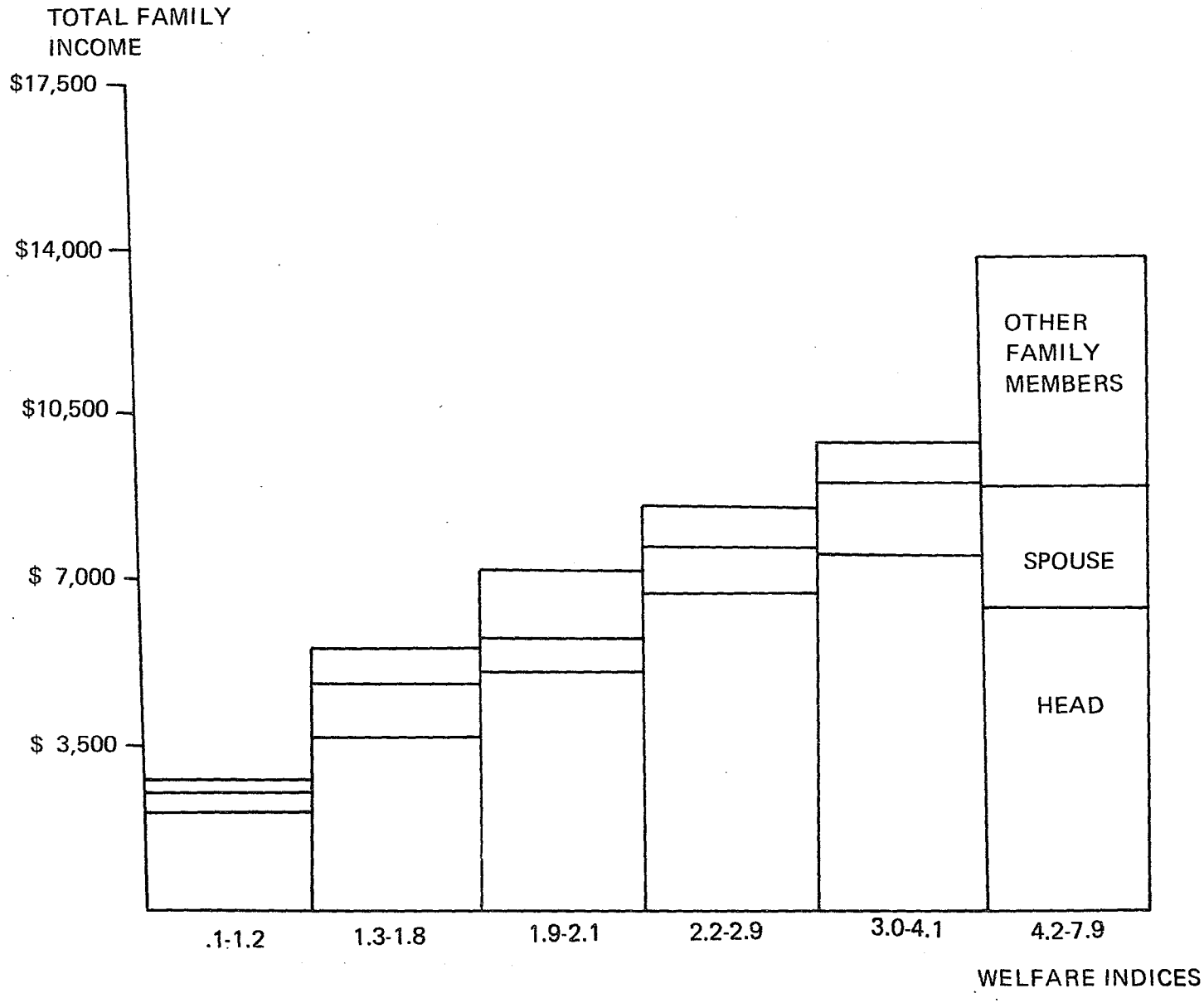
MULTIPLE-EARNER FARM FAMILIES

As shown earlier in Figure 4, the major source of income for the poorest farm families was net farm income, with only about 10 percent earned from wages and all other sources. For the families that were less poor and for those with average incomes and higher, net farm income provided a much smaller percentage of total family income. Wages and income from nonfarm businesses were of increasing importance when families were viewed from those with low welfare indices to those that were better off (Figure 4).

The aggregated income earned by each farm family member is reported by welfare index in Figure 8. The head was the major earner in the farm families; in viewing the farm families from the poorest up to those with average income (with a welfare index of about 2.2), the family income levels were higher mainly because the head earned more. But among families with above average incomes, differences in income were mainly because of larger absolute (and percentage) contributions by the spouse and other family members.

It was pointed out earlier that, among the farm families, the contribution of the head to total family income tended to be overstated to the extent that all farm income that was not specifically allocated to other members of the family by formal agreement was credited to the head. In reality, the spouse and other family members often contribute in significant ways to net farm income. This is suggested as the explanation why, among farm families that were the best off, the income earned by the head was less than for families not quite so well off (Figure 8). The spouse and other

Figure 8. Income earned by members in multiple-earner farm families, by welfare index.



family members earned substantial nonfarm income in these families that were better off, suggesting that because they were making substantial inputs into nonfarm work, they thus were not available to assist with the farm work. In such cases, the earnings of the head from farming would reflect only what he alone was able to earn without family assistance.

The major differences in sources of income for the total farm family were presented in Figure 4, and the absolute levels of aggregated income earned by the various members of farm families were presented, by welfare index, in Figure 8. The relationships that existed between the family members that received income and the sources from which they received income, by welfare indices, were reported in Table 10.

Here again, families are grouped together with others with similar levels of well-being as measured by their welfare indices. Families with welfare indices of .1 to 1.2 are referred to as "the poor" and in general are those families with incomes from slightly above the poverty line and lower. The "near-poor" includes those with welfare indices of 1.3 to 2.1, from just above the poverty line to families with about twice the poverty level income; they are below the average income for rural Wisconsin families. The third group has welfare indices ranging from 2.2 to 7.9 and includes the families with average income and above. These three groupings are adequate to demonstrate between-group differences, and are few enough in number to be examined conveniently.

Farm Families with Welfare Index of .1-1.2. Among the very poor farm families, the mean total family income was $2,633. Almost all the net farm income was earned by the head and averaged $1,581. About 36 percent of the heads received Social Security benefits, compared with about

Table 10. Income Sources, Percentage of Earners Reporting, and Mean Amount Reported for Multiple-Earner Farm Families, by Level of Well-Being.

Earner and Source	Level of Well-Being & Welfare Index					
	The Poor (.1 - 1.2)		Near-Poor (1.3 - 2.1)		Average & Above Average Income (2.2 - 8.0)	
Head						
Wages & nonfarm business	32%	$ 300	48%	$1,683	46%	$5,391
Net farm income	100	1,581	100	2,728	100	3,854
Off-farm custom work	7	500	25	845	16	1,024
Capital income	39	264	25	172	51	754
Transfer income	36	690	22	911	9	1,171
Spouse						
Wages & nonfarm business	26	1,157	53	2,033	52	2,663
Capital income	*	*	2	500	8	367
Transfer income	37	300	6	720	6	556
Other family members						
Wages & nonfarm business	22	233	23	1,445	63	2,430
Net farm income	*	*	18	1,812	6	2,655
Capital income	*	*	5	350	5	2,051
Transfer income	19	500	40	740	11	1,070
Total family						
All sources		2,633		6,090		10,435

Source: Wisconsin Economic Adjustment Survey [2].

*Less than one-half of 1 percent of the poor reported this source of income.

25 percent of all farmers. Those that received these benefits average $690 each. About 32 percent of the heads received wages or nonfarm business income, but averaged only $300 from that source. About forty percent received income from nonfarm investments but averaged only $264, for those receiving.

In about 37 percent of these families the spouse received Social Security benefits, but these averaged only $300. The only other income source reported by such spouses included in the sample were wages and nonfarm business income. About 26 percent received income from this source, averaging $1,157.

Family members other than the head or spouse contributed very little to total family income in these poorest households. In about 22 percent of the families, wages and nonfarm business income was received by others, but averaged only $233. About 19 percent received transfer payments from various sources, averaging about $500 each.

Thus, for these poor farm families, the farm income earned by the head, though only $1,580, was the most significant single source of income in the entire family. It made up 60 percent of the total income earned by all members from all sources. Social Security benefits were important to those heads and spouses receiving them, but the greatest family income help came from those few (some 26 percent) of the spouses that earned income from wages and nonfarm businesses.

Farm Families with Welfare Index of 1.3-2.1. The heads of the near-poor farm families (those with welfare indices of 1.3 to 2.1) averaged $2,728 in net farm income, which was about 45 percent of the total family income of $6,090. The farm income of the heads from farming was thus a substantially smaller part of total family income than for the poorest farmers, where

60 percent of total family income depended on this source. Farm income was augmented on about 18 percent of these farms by other family members who also earned income from a farm business. These family members averaged $1,812 each from farming. Net farm income earned by all family members was 52 percent of total family income.

About 48 percent of the heads received income from wages or nonfarm businesses, averaging $1,683 from that source. This was both a higher rate of participation and much higher dollar-level than reached by the poor. Twenty-five percent of the heads did custom machinery work off the farm, earning an average of $845 for their efforts, substantially more than the poor. Twenty-two percent received transfer payments averaging $911 each. But only 6 percent received Social Security payments, suggesting that these farmers were younger than the poorest group of farmers, on the average.

About 53 percent of the families had spouses that earned income from wages or nonfarm businesses; the spouses averaged $2,033 each compared with 26 percent and $1,157 among the poorest farm families. Six percent received Social Security benefits, averaging $720 each.

Farm Families with Welfare Index of 2.2 and Up. The household heads in a group with welfare indice of 2.2 and higher averaged 40 percent more net farm income than heads in the near-poor group. But the major income difference was in earnings from wages and nonfarm business--$5,391 per man compared with $1,683 per man in the near-poor group. Income from capital investments was received by 51 percent of the heads and averaged $754, substantially higher participation and earnings compared with lower income heads. Only 9 percent received any transfer income.

About 52 percent of the spouses earned income from wages and nonfarm

businesses in this group, about the same participation rate as among the near-poor. But they averaged about $630 more income each from this source, compared with the near-poor.

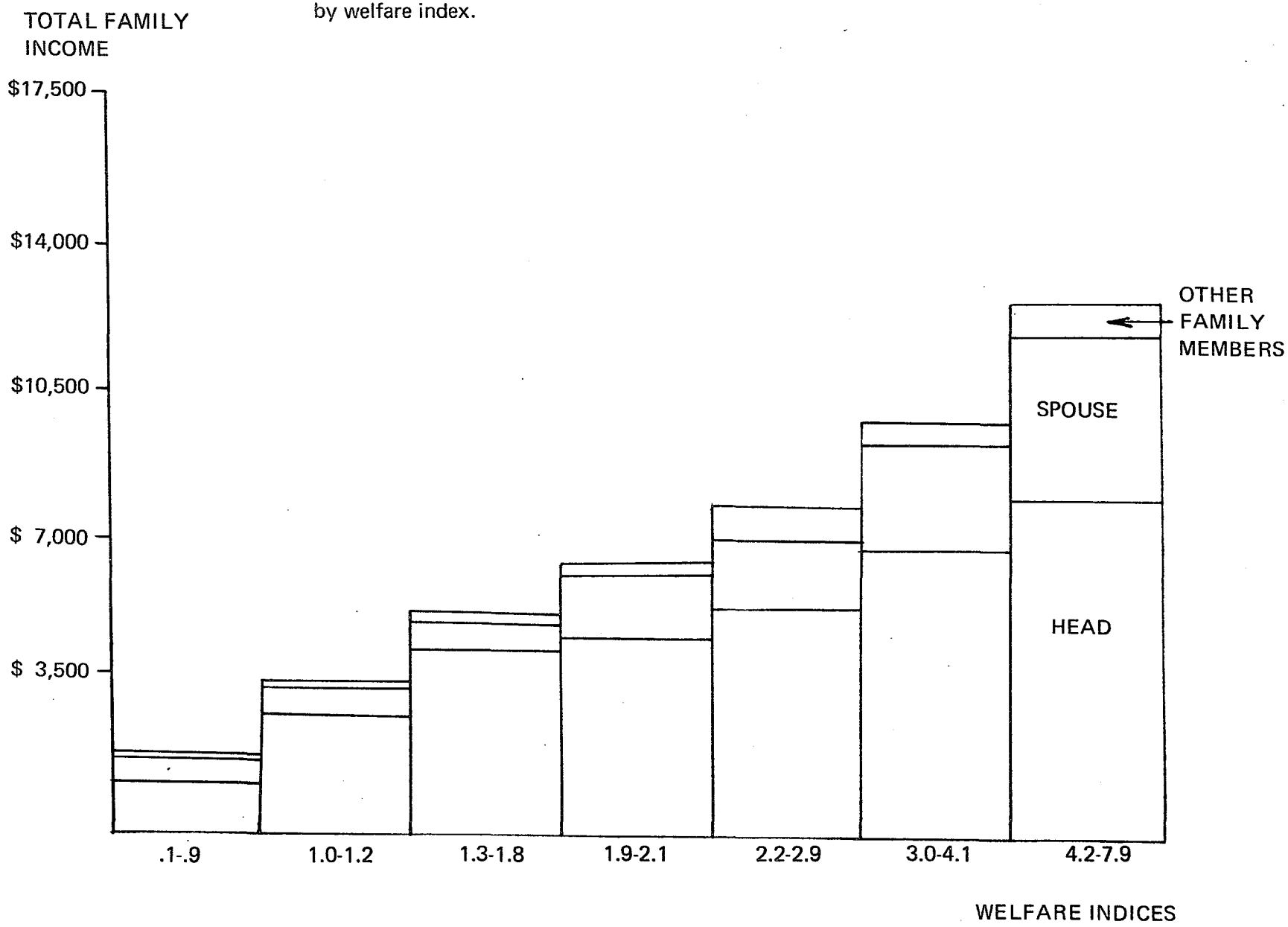
Family members other than the head or spouse were important earners in this group, especially among families with incomes four times the poverty level and higher (see Figure 8). Among all families in this group about 63 percent had other family members earning wages or income from a nonfarm business, and averaging $2,430 each. Eleven percent received transfer income, averaging more than one thousand dollars.

MULTIPLE-EARNER NONFARM FAMILIES

It was shown earlier in Figure 5 that the major source of income for the poorest nonfarm families was transfer income, but for families with average income or above the major source was wages and nonfarm business income. Knowing the major sources of family income is of interest, as is knowing, also, which family members were the major earners. This aggregated income earned by various family members is reported in Figure 9, by welfare indices.

The head was the major earner of income among the nonfarm families at all levels of well-being. The earnings of the spouse and other family members were not greatly different among the three poorest groups of families, those with welfare indices of 1.8 or lower. Among those families, the difference between welfare indices was related to the head having earned more. But for all the other groups, the greatest part of the differences in total family income and welfare indices were related to the spouses and other family members having earned more. That is, the differences in total family income from one welfare index to the next highest was mainly attributable to the head among the poorer families,

Figure 9. Income earned by members in multiple-earner nonfarm families, by welfare index.



but for families with about average income and higher, the income differences were mainly caused by the spouse and other family members (see Figure 9).

The relationships between which family members received income and the sources from which they received are presented by levels of well-being in Table 11.

Nonfarm Families with Welfare Index of .1-1.2. The poor nonfarm families are reported in two groups in Table 11. The very poorest had welfare indices of .1 to .9 and averaged $1,940 income from all sources per family. The number of persons supported per family by this level of income is not known, but all the families had at least two members because by definition two or more persons in these families reported receiving income. Sixty percent of the spouses reported receiving transfer income and 60 percent of the heads received Social Security income. Only 25 percent of the heads earned income from wages and nonfarm business, but those reporting this source averaged $1,980. Other family members generally did not contribute much to total family income, providing only about 10 percent of aggregated family income. The most common source for them also was transfer income.

In general, these poorest nonfarm families were not actively involved in income generating activities. Their income tended to be from transfers and investments, rather than from wages and business income.

The second group of poor families reported in Table 11 had welfare indices of 1.0 to 1.2 and averaged $3,719 income per family. They were oriented less toward transfer income and more toward wages and business income than the very poor. But even so, less than 50 percent of the heads earned income from wages or business, and only about 36 percent

of the spouses had income from that source. Transfer income (including Social Security) was received by 47 percent of the heads and 51 percent of the spouses.

The heads that earned wages and nonfarm income averaged $4,177 each, and the spouses, $858. In this group, compared with the very poor, (1) larger percentages of heads and spouses were actively involved in these kinds of work and (2) they received greater average amounts of income. Other family members earned about 5 percent of total family income.

Nonfarm Families with Welfare Index of 1.3-2.1. An average of $5,715 was earned by near-poor nonfarm families, with welfare indices that ranged from 1.3-2.1. The pattern of their earnings extended the differences noted between the very poor and the remainder of the poor. Seventy percent of the heads of these families worked for wages or in a nonfarm business and averaged $4,981 for their efforts. Fifty-five percent of the families had spouses that received income from wages or nonfarm business, and the spouses averaged $1,528 each. Both the percentage that received this income and the mean level were higher than in the lower groups.

Thirty-eight percent of the heads received Social Security benefits, which was a smaller percentage than among the families with lower welfare indices but still a substantial percentage. Considerably fewer spouses received transfer income compared with the next lower welfare group. The mean levels received were about the same as in the lower income group.

Other family members also participated relatively more in earning wages or income from a nonfarm business, and relatively fewer received transfer income. However, here as in the lower income groups the contribution of other family members to total family income remained very

Table 11. Income Sources, Percentage of Earners Reporting, and Mean Amount Reported for Multiple-Earner Rural Nonfarm Families, by Level of Well-Being.

Earner and Source	Level of Well-Being and Welfare Index							
	The Poor				Near-Poor		Average Income and Above	
	.1 - .9		1.0 - 1.2		1.3 - 2.1		2.2 - 7.9	
Head								
Wages & nonfarm business	25%	$1,980	47%	$4,177	70%	$4,981	90%	$6,958
Investment income	47	418	57	518	26	614	40	921
Social Security	60	847	47	968	38	1,201	19	1,289
Other transfer income	30	533	9	1,150	28	1,096	22	1,023
Spouse								
Wages & nonfarm business	20	650	36	858	55	1,528	77	3,011
Investment income	*	*	6	366	1	600	4	1,025
Transfer income	60	439	51	717	25	697	9	731
Other family members								
Wages & nonfarm business	5	400	11	780	17	614	24	2,964
Net farm income	*	*	*	*	1	4,000	*	*
Investment income	7	600	*	*	2	1,000	3	300
Transfer income	18	700	26	516	12	760	8	930
Total family								
All sources		1,940		3,719		5,715		10,430

Source: Wisconsin Economic Adjustment Survey [2].

*Less than one-half of 1 percent of the respondents reported this source of income.

small--about 3 percent of total family income.

Nonfarm Families with Welfare Index of 2.2 and Up. The total family income for this group averaged $10,430, and its welfare indices ranged from 2.2 to about 8. The patterns in sources of income and levels of participation noted among the other welfare groups were continued by this group. Larger percentages of the heads, spouses, and other family members earned income from wages and nonfarm income than in the lower welfare groups, and those that received this source also averaged larger amounts. The heads earned income from this source in 90 percent of the families, the spouse in 77 percent of the families, and the other family members in 24 percent. Heads averaged nearly $7,000, and the spouses and other family members averaged about $3,000 each.

Transfer income was received by a smaller percentage of the heads, spouses, and the other family members than in the lower welfare groups. The levels received, however, were about the same for the heads and spouses and a little higher for the other family members.

Among the various welfare levels, the patterns in income from wages and nonfarm businesses and from transfers were pronounced and consistent. This was not so for other sources of income. Investment income was received by about 47 percent of the poor heads, averaging $450. It was received by a smaller percentage but at higher average levels by the near-poor heads and those that were better off. Investment income for the spouses and other family members did not display clear patterns. A very few other family members earned income from farming, at all welfare levels, but this source was reported by less than one-half of 1 percent of all the nonfarm families.

B. SIZE DISTRIBUTION OF INCOME

In the preceding sections, the focus was on observed family income compared with needed family income. Families were grouped by their welfare ratios, a measure of how adequate their observed income was in comparison with an estimate of their need. Particular attention was given to how the various sources of income and numbers of earners differed among the poor, the near-poor, and the families with above average income.

A family's well-being does depend on how much income it receives relative to its subsistence requirements. But the well-being of a family also depends on how its income compares with the incomes of its neighbors. If all families were equally poor, the direction of concern about poverty and the public policies to raise income and well-being would be quite different from those suggested for the present situation. There is concern about low income not only because it provides a level of living that is limited in the absolute sense, but also, particularly, because the level is low relative to the remainder of society. This difference in levels of income among families has been an important public policy question over long periods of time and in many countries. The distribution of income is the focus of the remainder of this report.

In considering the total distribution of income among rural Wisconsin families, they are grouped not by level of income relative to need (welfare index), but by level of family income relative to that of other rural Wisconsin families. The size distributions of income will be presented separately for farm and rural nonfarm families, and the results

compared with similar studies. This will be followed by a brief discussion of how the major sources of income affect the equality (or inequality) of the total distribution of income.

INCOME DISTRIBUTION FOR RURAL WISCONSIN FAMILIES

Lorenz curves are presented in Figures 10 and 11 to display the size distribution of income (from all sources) for farm and rural nonfarm Wisconsin families. These curves plot the cumulated percentages of families ranked on ascending income (on the horizontal axis) against the cumulated percentage of aggregate income (on the vertical axis). If each family received the same income the plotted curve would fall along the 45 degree diagonal line; each decile of the population would receive 10 percent of the aggregated income, and so on. But the plotted curves in Figures 10 and 11 fall to the right of the diagonal, demonstrating that the lowest decile of the population (for example) received less than 10 percent of aggregated income. The greater the distance the plotted curve falls to the right of the diagonal, the greater the inequality of that income distribution.

A summary of the data from which these curves were plotted is presented in Table 12. The 10 percent of the farm households with the lowest incomes received only 2.4 percent of the total income received by all farm households. In contrast, the 10 percent with the highest incomes received 21.6 percent. The 30 percent of the rural nonfarm households with the lowest incomes received only 10.3 percent of the total incomes received by all rural nonfarm households (see Table 12).

Visual examination of the two plotted curves (Figures 10 and 11) suggests that the distribution for the farm households was very little

Figure 10. Lorenz curve of income distribution of Wisconsin farm families.

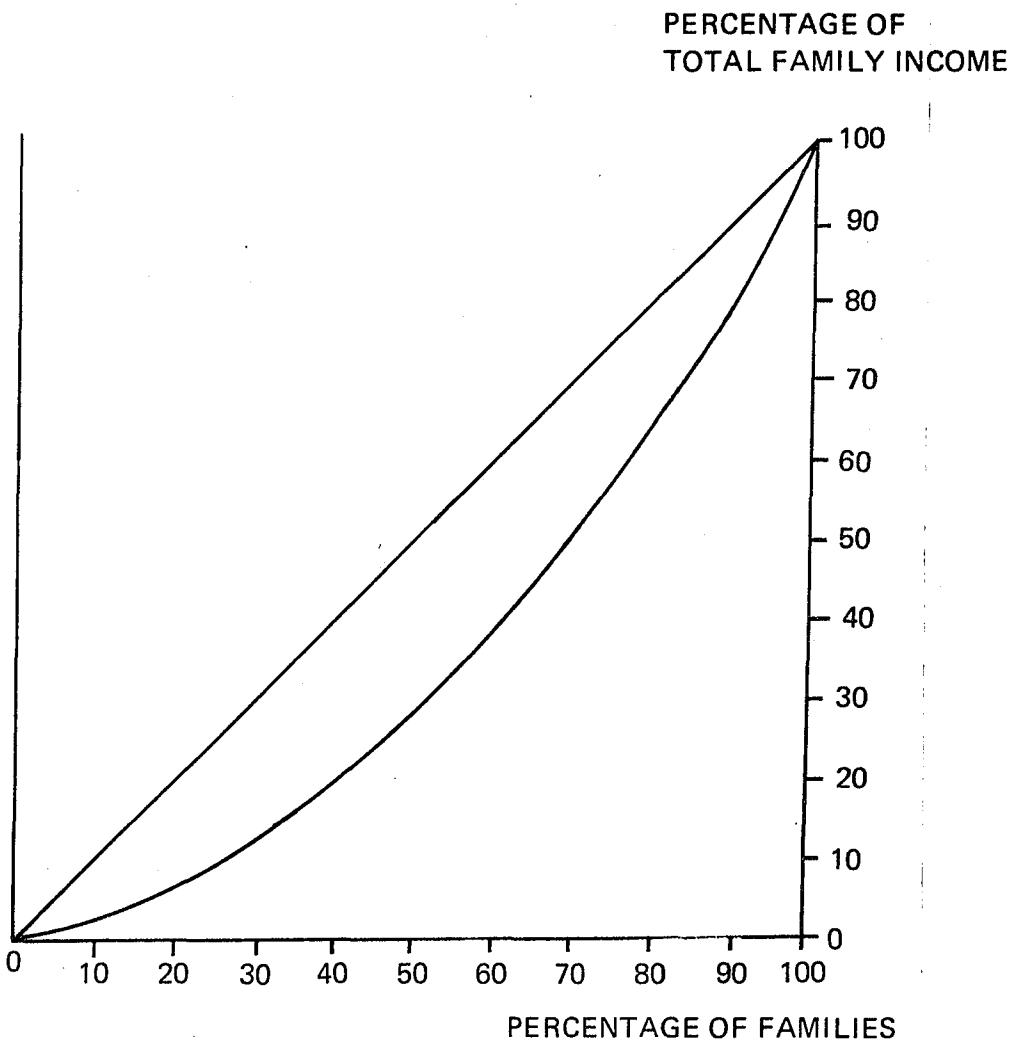


Figure 11. Lorenz curve of income distribution of Wisconsin rural nonfarm families.

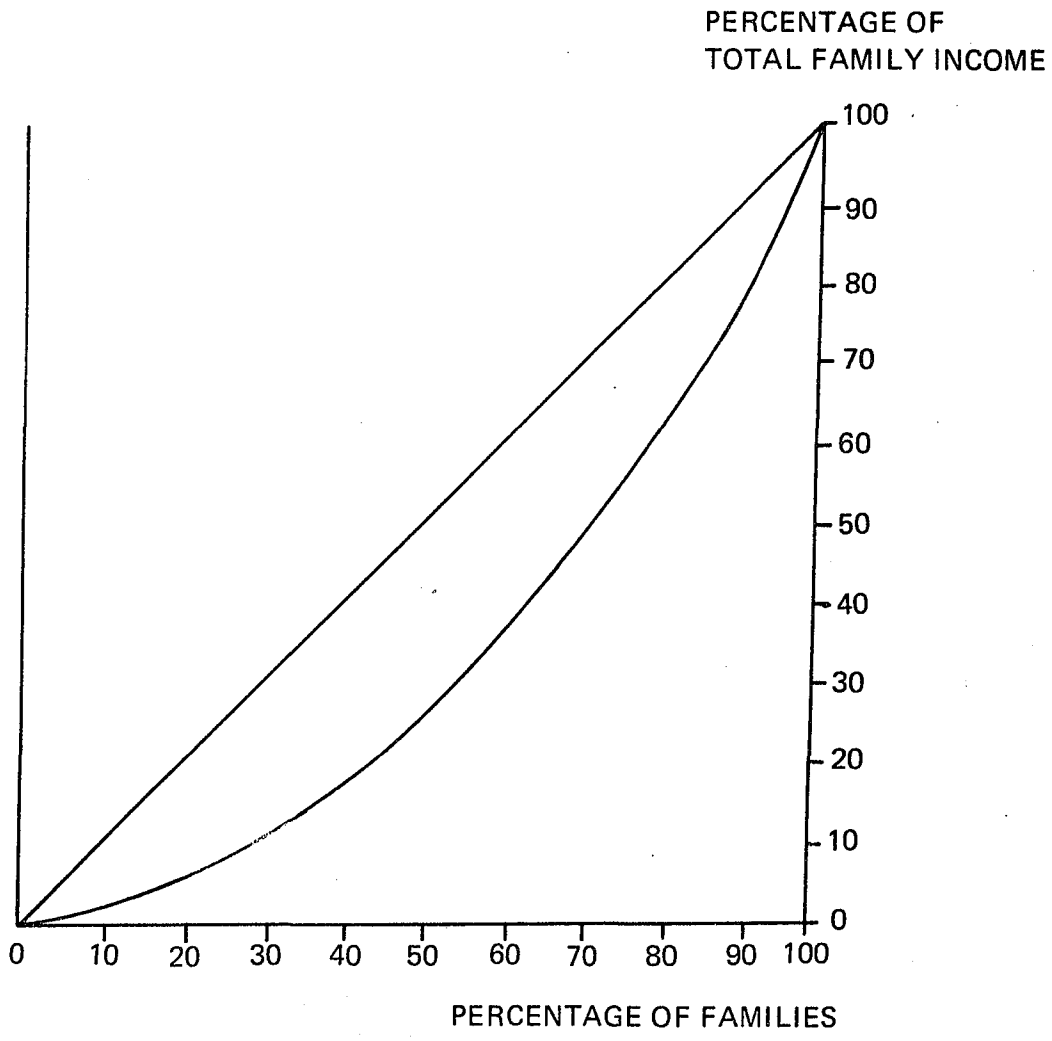


Table 12. Percentage Distribution of Total Household Income When Ranked by Deciles. Rural Wisconsin Households, 1967.

Decile	Farm Households	Rural Nonfarm Households
Lowest	2.4%	1.8%
Second	4.1	3.4
Third	5.7	5.1
Fourth	7.7	7.0
Fifth	9.1	8.9
Sixth	10.1	10.8
Seventh	11.4	11.9
Eighth	13.0	13.7
Ninth	14.9	15.7
Highest	21.6	21.7
	100.0%	100.0%
Gini Ratios	0.297	0.325

Source: Wisconsin Economic Adjustment Survey [2].

different than the distribution for the rural nonfarm households. Data in Table 12 generally confirm this but indicate slightly more inequality among rural nonfarm households (the lower deciles received relatively smaller percentages and the upper deciles relatively higher percentages) compared with the farm households. Examination of Gini ratios is another means of comparing the income inequality of these groups. Gini ratios are measures of concentration (in this case, the concentration of income) and are calculated as the ratio of the area between the 45 degree diagonal line and the plotted Lorenz curve to the total area under the diagonal. If each family received the same income, the ratio would be zero and if one family received all the income the ratio would be one. Gini ratios thus fall between 0 and 1, and the smaller the ratio, the more equal the distribution. The mathematics involved in calculating the ratio is reported elsewhere [10].

The Gini ratios of income concentration in rural families in Wisconsin were calculated to be 0.297 for the farm families and 0.325 for the rural nonfarm families. These calculated ratios understate slightly the true ratios for these two groups because the ratios were based on linear segments connecting deciles of the population rather than a continuous function based on individual observation. In spite of this, valid comparisons can be made between the two [11]. They confirm that aggregated total family income was slightly more uniformly distributed among the farm families than among the rural nonfarm families.

For the first time, the 1970 Census of Population calculated concentration ratios based on the size distribution of income [12]. Definitions of farm and rural nonfarm were the same in the Census and in the study reported here, but single-member families were separated

from other families in the Census. The Census was based on a much larger sample, 20 percent of the households. Concentration ratios in the Census indicated more inequality in the distribution of income in 1969 than reported here for 1967 (see Table 13). Also, farm family income displayed more inequality than rural nonfarm family income. A great deal of year to year variability in the Gini ratios computed for U.S. farm families over time has been documented elsewhere [13]. It is not known how much of the difference in Gini ratios for farmers shown in Table 13 is a reflection of this variation. The differences between the two sources do not provide the basis for projecting a trend.

IMPACT OF INCOME SOURCE ON EQUALITY OF INCOME DISTRIBUTION

The distribution of any one source of income among families may be more or less equally distributed than is total income from all sources. Some income sources tend to even out and make more equal the distribution of total income, and other sources contribute to inequality. Knowledge about the impact of income sources on the aggregate distribution of income has relevance, particularly because of public interest in modifying the total distribution. For example, public welfare programs are specifically designed to raise incomes of low-income families--to reduce the inequality of the aggregate income distribution. In practice, what is the effect of the programs? Do Social Security benefits and veteran's benefits also tend to increase equality in total incomes? Does the nonfarm work of farm families contribute to equality of total income of farm families? An extension of Lorenz curve analysis makes it possible to graphically display the impact of each income source on the distribution of total income and to provide insight into these kinds of questions. These graphic presentations are called "source impact curves" and demonstrate

Table 13. Calculated Gini Concentration Ratios, Wisconsin, 1967 and 1969.

	1967[a]	1969[b]	
	Families & Unrelated Individuals	Families	Unrelated Individuals
All Wisconsin	c	.327	.502
Urban	c	.313	.498
Rural nonfarm	.325	.332	.505
Rural farm	.297	.392	.517

[a]Wisconsin Economic Adjustment Survey [2].

[b]U. S. Bureau of the Census, Census of Population: 1970. "Detailed Characteristics." Final Report PC(1) - D51 Wisconsin.

[c]This information not available in the Wisconsin Economic Adjustment Survey.

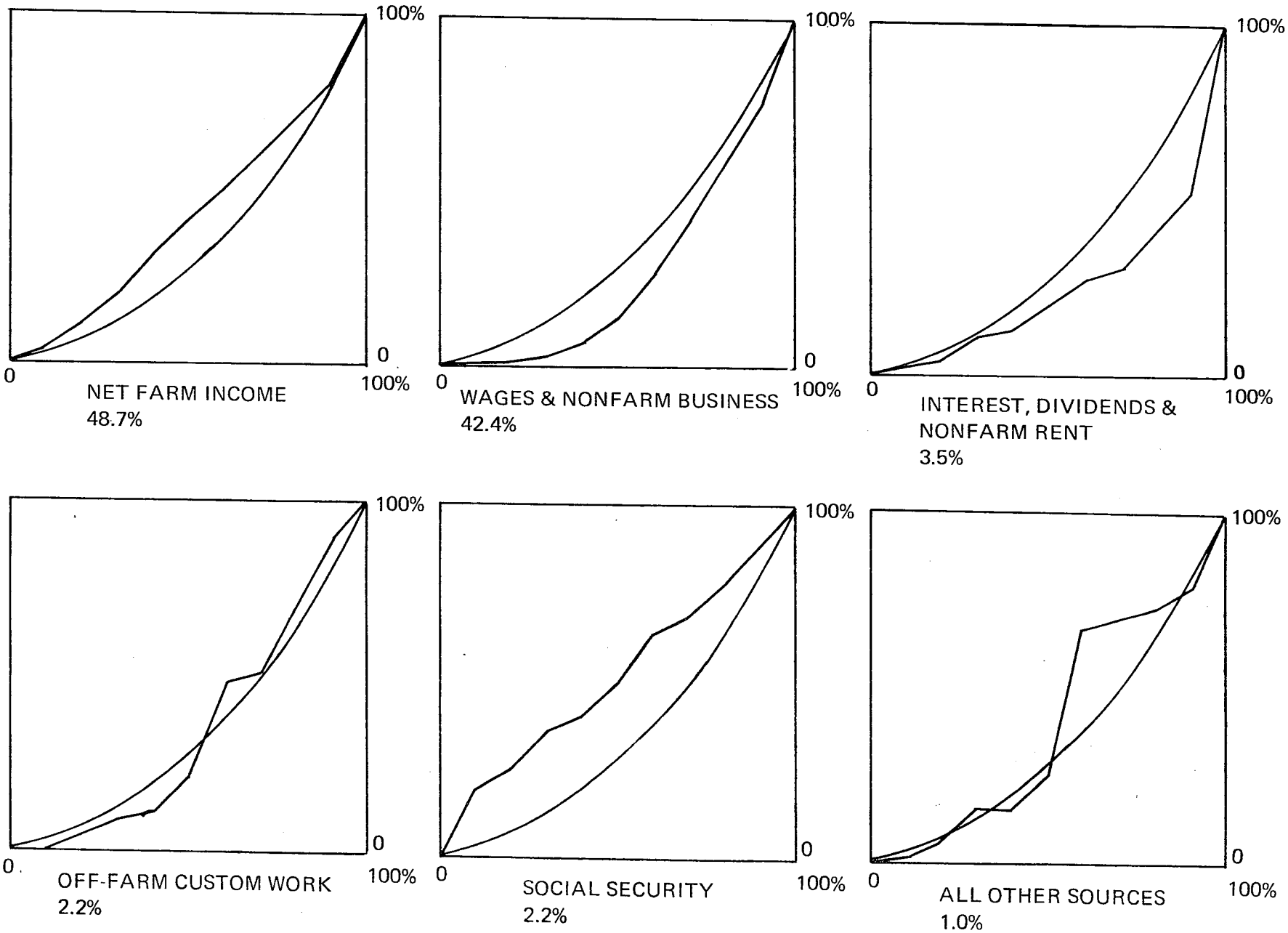
the impact of each income source on the distribution of total income (the Lorenz curve).

Families were arrayed as before from lowest to highest total family income, divided into deciles, and the Lorenz curve was plotted as before. The Lorenz curve is, in fact, the average of the distributions of all sources of income, weighted according to the magnitude of each source relative to total income. The horizontal axis of this graph continues to be the same as for the Lorenz curve--each unit on the axis represents a given percentage of families ranked on total family income. The vertical axis measures the cumulative percentage of total income for the Lorenz curve and the cumulative percentage of a given source of income for the "source impact curve". If the plotted source impact curves falls above (to the left) of the Lorenz curve it indicates that the particular source is distributed among families in a way that tends to make the total distribution more equal. An income source whose plotted source impact curve was identical to the Lorenz curve would be distributionally neutral. A source whose curve fell below (to the right) of the Lorenz curve would tend to increase the inequality of the total income distribution. The source impact curves for major sources of income are presented in Figures 12 and 13 for Wisconsin farm and rural nonfarm families.

FARM FAMILIES

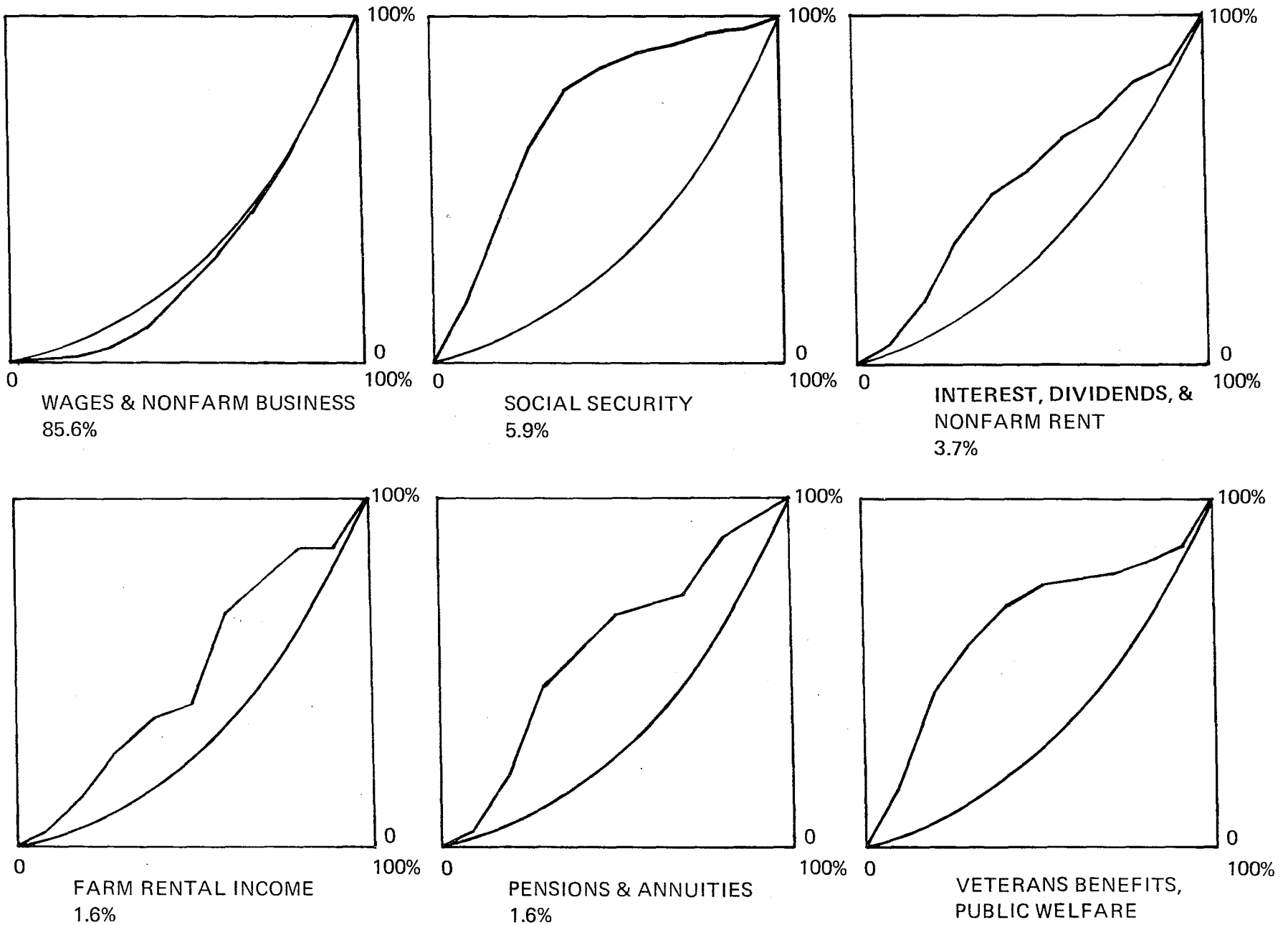
Aggregated farm families received 48.7 percent of their total income as net farm income, their most important single source. The source impact curve for net farm income is plotted with Lorenz curve in the first graph in Figure 12. The Lorenz curve is identical to the one presented in Figure 10. It shows, for example, that the lowest decile

Figure 12. Impact of source of income on size distribution of income, Wisconsin farm families.



Note: Percentage indicated is percent of total family income from all sources.

Figure 13. Impact of source of income on size distribution of income, Wisconsin rural nonfarm families.



Note: Percentage indicated is percent of total family income from all sources.

of farm families received 2.4 percent of total family income, the first two deciles received 6.5 percent, the highest decile 21.6 percent, etc. The source impact curve on this graph shows that the same lowest decile of farm families received 3.6 percent of net farm income, the first two deciles received 10.3 percent, the highest decile 19.7 percent, etc. Thus, the source impact curve is plotted above (to the left) of the Lorenz curve, indicating that net farm income tended to increase the equality of the distribution of total farm family income.

Wages and nonfarm business income was also a major income source for farm families, comprising 42.4 percent of total income from all sources (see second graph in Figure 12). The plotted source impact curve lies below (to the right) of the Lorenz curve, indicating that this source contributed to the inequality of the distribution of total income. That is, wages and earnings from nonfarm business was a source of income that permitted richer farm families to enjoy more than proportional shares of aggregated income.

Interest, dividends, and nonfarm rent also contributed to inequality of the total income distribution (third graph in Figure 12). The highest decile of the population received one-half of all income from these sources, a very unequal distribution. But because these sources were only 3.5 percent of total income from all sources, their impact on the Lorenz curve was much less than that of income from wages and nonfarm businesses.

Social Security contributed to the equality of the total income distribution. The lowest population decile received 20 percent of all Social Security benefits, for example, and each half of the population received half of the benefits. Income from off-farm custom work (doing machinery work for another farmer for pay) was distributed among farm

families in much the same way as total income. All other income sources combined, including veterans' benefits and public welfare payments, were a very small part of total income and were also distributed in much the same way as total income.

RURAL NONFARM FAMILIES

Among these families about 86 percent of total family income came from wages and nonfarm business income, and this source was distributed among the families in a very unequal pattern. The 30 percent of the families with the lowest total income received 4.0 percent of the wages and nonfarm business income, and the lower half received less than 20 percent of the total. In contrast, the highest 20 percent of the families received 42 percent of the income from this source.

Social Security accounted for about 6 percent of total income from all sources for this group and tended to decrease income inequality. The 33 percent of the families with the lowest incomes received 66 percent of the Social Security benefits. The upper half of the families in terms of total family income received less than 15 percent of the total Social Security benefits. Public welfare payments, veterans' benefits and pensions, and annuities also tended to decrease the inequality of total family income. For nonfarm families the effect of investment income, nonfarm rent, and farm rental had a similar but less pronounced effect.

POTENTIAL APPLICATION OF SOURCE IMPACT ANALYSIS IN POLICY MAKING

Information about the distribution of component sources of income has potential usefulness in policy analysis. Source impact curves reflect the underlying distributions of productive resources and entitlements. This information can be used to make inferences about the impact on total income distributions of certain price changes or across-the-

board increases or decreases in certain policy-determined sources of income.

One can legitimately infer from the source impact curves presented in Figures 12 and 13, for example, that a 5 percent across-the-board increase in Social Security payments would have an equalizing effect on income distribution in rural Wisconsin. The effect would be more pronounced for rural nonfarm families than for farm families because Social Security is a more important source of total family income to the former (5.9 percent versus 2.2 percent) and because the rural nonfarm curve is more skewed to the left. But it would be necessary to assume that farm production costs did not change and that they were a constant percentage of gross farm sales for all deciles for a 5 percent across-the-board increase in the price of every farm product to have an equalizing effect on income distribution for farm families. Available evidence indicates, however, that farm costs are not a constant percentage of gross farm sales at all levels of income [14]. The use of source impact curves to analyze the effect on income distribution of changes in the price of farm products could be sharpened by integrating this evidence into the analysis.

No inferences should be made, however, about the effect of changes in the source composition of rural income on the equality of the distribution of rural income. For instance, one would not wish to infer that, because the distribution of wages tends to make less equal the total distribution, an increase in the proportion of rural income from wages would tend to worsen the income distribution. Indeed, it is quite possible that the increases would go to the unemployed who would likely belong to the lower deciles. Or they could easily go to those spouses of presently

employed middle decile families. The point is that one cannot necessarily say, a priori, which decile will receive a greater proportion of the increases of a given source of income.

With this limitation in mind, one can use the information presented to get a better understanding of how each source of rural income is distributed, whether its distribution tends to increase or decrease inequality in the distribution of total income, and what effect selected policy changes might have on rural income distribution.

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