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An appraisal of farm income statistics with particular reference to Kossuth County, Iowa

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AN APPRAISAL OF FARM INCOME STATISTICS WITH PARTICULAR
REFERENCE TO KOSSUTH COUNTY, IOWA

by

James Martin Redfern

A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of
The Requirements for the Degree of
MASTER OF SCIENCE

Major Subject: Agricultural Economics

Signatures have been redacted for privacy

Iowa State University
Of Science and Technology
Ames, Iowa
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INTRODUCTION

Need for Study

Income statistics may be viewed as being primarily positive in that they give an indication of what the income situation is. However, they are often used for normative purposes in that they provide a criterion on which programs and policies are drawn up to make the future situation different from the current one. Policymakers drawing up programs which seek to change labor allocation will take note of the present situation as defined by different income statistics. The policymaker might be concerned with the factors which cause labor to remain in farming at what appears to be a substantially lower return than could be made in other occupations. One estimate of this gap would be the difference between the average net income per farmer and the average income per factory worker. Another researcher might have a hypothesis that labor is allocated fairly well in terms of marginal principles, but might wish to evaluate how far short different groups of labor fall from a certain level of income, set up as a "fair return", "subsistence level" or some other standard. Again the income statistics will be used.

The foregoing has already touched upon the second reason which justifies the study. There are different income statistics in existence, but they are not necessarily correctly substituted for each other in research. Some statistics are more comprehensive than others in terms of what components are included. Others might have been designed for a certain type of research project and therefore be of the wrong form for another type.
This is why it is worth considering several of the statistics and comparing them as completely as possible.

**Objectives**

One objective is to evaluate several established income statistics. Another objective is the formation of a set of statistics on income built on the extension service sample of a northwest Iowa county. All the statistics considered, both published and built up by the writer, are to be compared from as many different relevant points as possible. A further objective is to cross-classify the county data in order to test hypotheses concerning the relationship between net farm income and other income received by farm families.

**Area of Study**

Geographically, the study is concerned with income statistics which apply to Iowa agriculture. The published statistics are taken from series published by the U.S. Department of Agriculture, the U.S. Department of Commerce, and the Iowa Extension Service. The county data are from a study carried out jointly by the Economics and Home Economics departments which surveyed 200 farmers and nonfarmers in Kossuth county, Iowa.

**Method of Analysis**

First, the published statistics selected for evaluation are considered. Then the reasons why these may have disadvantages compared with statistics obtainable from a county survey are discussed. This leads into a consideration of the data collected by the county survey. These data are used to build new statistics and results in a series of tables which "map" the income situation for those people in the county covered by the survey.
REVIEW OF THE CHARACTERISTICS OF FARM INCOME STATISTICS

General Requirements for a Farm Income Statistic

Suitability

In some cases, such concerns as the suitability of the statistic will not arise, because only parameters, rather than statistics, are involved. This will be the case where Census data is used to specify the 1959 population of a county. Where statistics are used, however, suitability becomes important. For a certain research objective, several statistics, which may have several common properties, might at first seem appropriate but be actually different in operation. One or more statistics might be more suitable for reaching the objective than other statistics.

Completeness

Income statistics may or may not include several different categories. For example, some statistics consider only the current income received and do not make any adjustment for fringe benefits which have a value expressible in money terms. The use of an incomplete statistic may lead to a set of conclusions substantially different from those that would be obtained if a more complete statistic were used.

Accuracy

This is a criterion which has a partly quantitative answer to it. Sampling techniques can be used for which it is possible to specify the sampling error and then to indicate statistically what degree of confidence should be placed in the estimate. Where it is not possible to make a quantitative judgement of the accuracy of the statistic, one can often be reasonably confident that one statistic is more accurate than another.
Accuracy and completeness are competitive after a certain point because to make a statistic more complete requires the estimation of component parts and it is likely that these estimates will be less accurate, particularly as these involve quantifying components which are, in the first instance, nonquantitative, such as fringe benefits in the form of free medical services.

Verification

This characteristic hinges on the idea that a statistic is made stronger—that is, it can be used with more confidence—if there are other statistics which confirm or back up the numerical values of the first one. Verification ties in closely with the next characteristic.

Relation

When a statistic is easily related to other statistics it is likely that its use will be easier since it ties in well with other related information which may be profitably used in the analysis. A statistic will usually be related to a set of statistics which come from the same data, but it is also useful if a completely different series can be related in a concrete manner to the first.

The above 4 requirements are really concerned with the practical application of the statistics especially to matters of policy. With the policy uses in mind, income statistics can be used to measure 2 major aspects:

1. welfare
2. resource returns

The difference between them is subtle. Consider resource returns. It is theoretically possible to separate out the return to one specific re-
source. Suppose we consider a wheat farm operating with $X$ units of land, $Y$ units of capital, $Z$ units of labor and so on. The returns to this combination can be measured. Then the quantity of capital could be increased from $Y$ to $W$ units of capital with all other inputs remaining at their old levels. When the new returns were measured, the difference between the two levels of returns would indicate the returns to the extra $W-Y$ units of capital used in a certain form with a certain quantity and combination of other resources. In actual fact, of course, there are so many variables (the most important one being the climatic conditions) that such a method of measuring resource returns is out of the question.

A procedure which is used to calculate resource returns in agriculture is by the use of net farm income. Costs are subtracted from returns and what remains is the net return to the owner of the land, capital, unpaid family labor and management which were used in the production of the product. If an estimate of the return to the management resource only is wanted, a customary way of obtaining it would be to subtract out a return to land, capital and unpaid family labor based on the quantity of each used and a certain rate (e.g. current interest rate on first mortgages in the case of the land resource), and then the remainder is the return to management.

Welfare is not always adequately measured by a simple money net return figure. Suppose that the net money return from farming to operator labor and management is calculated. If this turns out to be less than the annual income of an employed factory worker, is it reasonable to conclude that the farm operator has a smaller amount of welfare than the average factory worker? The answer is "not necessarily", since welfare
is accounted for by measuring the person's total purchasing power or control over goods and services. One example is housing. The farmer will not usually have to pay rent for his home which is usually part of the farm; the factory worker will typically be paying out money for his home.

Definition of a Farm

What a farm is

This definition is a critical one in a study of incomes especially where the results are used to draw policy type conclusions. The definition of the farm acts as a parameter in allowing the farm population to be separated from the nonfarm population. Once it has been decided what a farm is and, correspondingly, what it is not, then counts can be made and income estimates calculated. Such a statistic as the average income per farm in Iowa is wholly dependent on the definition of a farm; the denominator is the actual number of farms in Iowa and the numerator, total income from all farms in Iowa, is also wholly dependent on what the researcher wishes to call a farm.

The best known definition of a farm and one of the most precise is that used in the Census of Agriculture. Since the world is a dynamic, everchanging place it is reasonable that a definition should also change over time. The Census is taken every 5 years, and the 2 Census definitions to be studied are taken from the 1959 and 1954 Censuses respectively.

In the 1959 Census of Agriculture, places of less than 10 acres were counted as farms if the estimated sales of agricultural products for the year amounted to at least $250. Places of 10 or more acres were counted as farms if the estimated sales of agricultural products for the year
amounted to at least $50. Places having less than the 50 or 250 dollar
minimum estimated sales in the year of the Census were also counted as
farms if they could normally be expected to produce agricultural products
in sufficient quantity to meet the requirements of the definition. One
of the criticisms of such a definition is that it includes many places
which are a long way removed in character from what most people think of
when they think of a farm. It is however, from this point of view, more
satisfactory than the definition used in the 1954 Census.

In that Census, places of 3 or more acres were counted as farms if
the annual value of agricultural products, whether for home use of sale
but exclusive of home-garden products, amounted to $150 or more. Places
of less than 3 acres were counted as farms only if the annual sales of
agricultural products amounted to $150 or more. The number of farm oper-
ators is considered to be the same as the number of farms in both the 1954
and 1959 Censuses (32, p. 5).

Thus 2 criteria, the area of the place and the value of agricultural
products sold are used to decide whether a place is a farm or not. The
main problem is encountered with small places although it is likely that
an increasing number of large agricultural production units are being ar-
ranged on a corporate basis or becoming part of larger vertically inte-
grated operations and therefore moving away from the traditional concept
of a farm. Since such units are above the minimum land area or value of
agricultural sales or meet both requirements together they are called
farms.

Many places producing agricultural products are obviously farms, but
as smaller and smaller agricultural operations are considered, the number
of researchers and policymakers prepared to argue whether or not such a place should be classified as a farm also increases. The Census definition was changed for the 1959 Census because, firstly, places were classified as farms even though they were not thought of as farms by local people. Secondly, the increase in open country living has boosted the number of such places. Even with the 1959 definition, it still covers a lot of farms which are hardly economic units by themselves. One suggestion to solve this smallholding problem, is to distinguish between those places which are farmed for profit and those which are primarily rural residences.

There are several alternative ways of defining a farm. One would be to emphasize the operator rather than the place as a means of defining a farm. If a man actually operates a place producing agricultural products i.e. if he himself makes the management decisions, his place could be called a farm if he spent more hours working on the place than he spent on any other single occupation. This labor approach to the problem of identifying a man’s principal occupation has a drawback in that a man might hold 2 jobs, one of which is farming; and put in more hours at farming yet the returns per hour worked might be inferior in farming compared with the other job so that the yearly net return from farming might be smaller than from the other job.

The drawback mentioned above suggests that another method of farm definition again using the operator of the place rather than the place itself, might be built around the net income earned in various occupations. If the operator of a place producing agricultural products nets more income from working on such a place than he does from any other single occupation, than he might be classified as a farmer and the place which
he operates as a farm.

Another possibility is to specify the characteristics of an economic agricultural production unit and define similar places as farms if they fall close to the economic unit with respect to several key characteristics. For example, it was estimated in 1961 that Iowa farms had considerable cost advantages at a size of 320-350 cropland acres. (10, p. 5) If in addition to the number of cropland acres several other important and easily and accurately obtained characteristics could be decided on and an allowable range put on each, then places could be evaluated as to whether or not they meet this definition of a farm.

Another definition, based on a typical farm concept like the two discussed previously, hinges around the family farm which itself has been written about a great deal. In this case, a possible basis for farm definition would be the adequate family farm. The family part is satisfied by restricting the amount of farm labor to be hired to the equivalent of that available from the farm family. This has been estimated at 1.5 man-years for the typical family, and therefore a place could hire up to 1.5 man-years of labor without being moved out of the category. In 1962, the dividing line between adequacy and inadequacy was estimated at $10,000 gross sales which would have been expected to yield normally at least a net income of $2500 for family living. (6, p. 537) Writing in 1965, the cost of living has risen and the notion of what is considered to be a minimum level of income for adequate family living has changed. A net income of $2500, even with an adjustment made for value of home produced food, and the net rental value of the family dwelling, would be close or
even below the recently announced poverty level of $3,000. However, the point to be made is that perhaps farms could be defined from this concept (revised for the current time period) of the adequate family farm by putting ranges on key variables and accepting places producing agricultural products as farms if their values for the key variables fall within the ranges.

The approaches above which involve a sort of representative farm with different factors being emphasized in each of the individual approaches of this same general type, might be more worthy of deeper attention if it was not for the fact that a definition of a farm of the Census type—that is, a broad definition which inevitably picks up some rural residences and other places which do not come near the traditional concept of a farm—combined with a rigorous classification of types of farm is probably as good an arrangement as any which has yet been used to any extent.

Agriculture is probably the industry in the United States which comes the closest to approximating the conditions of pure competition. This might be one important explanation of the great heterogeneity with respect to types of operation (economic types are being thought of particularly here) which generates a supporting argument for the broad Census farm definition and a good case for a rigorous classification of economic types of farm within the definition.

**Farm classification**

The Census data on farms by economic class had been used extensively in research by economists. Several different criticisms have been leveled at the set-up used. There is, nevertheless, a great deal of information
about the agricultural situation to be gained from the breakdown used.

The economic classifications represent groupings of farms that are similar in characteristics and size of operation. One or more of 4 factors were used in 1959 to place farms in the economic classes. These were:

1) total value of all farm products sold
2) number of days the farm operator worked on the farm
3) the age of the farm operator
4) the relationship of the income received by the operator and members of his household from nonfarm sources to the value of all farm products sold.

It seems likely, to the writer, that this last factor and similar new factors along the same line will warrant more emphasis in the future, and possibly give rise to new classifications as the practice of operating a farm and working at a nonfarm job at the same time become more widespread.

Two major categories of farm, commercial farms and other farms, were set up on the basis of total value of products sold. In 1959, all farms with a value of sales amounting to $250 or more were classified as commercial. Farms with a value of sales of $50 to $2499 were classified as commercial if the farm operator was under 65 years of age and (1) he did not work of the farm 100 days or more and (2) the income that he and members of his household received from nonfarm sources was less than the total value of farm products sold. The remaining farms with a value of sales of $50 to $2499 and institutional farms and Indian reservations were included in one of the classes of other farms. The latter two were put together in class IX, Abnormal. The two other classes of noncommercial farms in addition to this one are Class VII, Part-time and Class VIII, Part-retirement. Farms with a value of sales of farm products of $50 to $2499
were classified as Part-time if the operator was under 65 years of age and he either worked off the farm 100 or more days or the income he received along with members of his household from nonfarm sources was greater than the total value of farm products sold. Where the farm operator was 65 or older the farm was classified as Part-retirement.

Several writers have questioned the consideration of these non-commercial farms as farms, especially where statistics for them are combined with statistics for the commercial farms to make the point that the average farm operator is in an unenviable position compared with the average nonfarm worker. Thus Edward Higbee quotes figures from Food and Agriculture: A Program for the 1960's which show that the operator families on 1.6 million farms—those which had a value of farm products sold between $50 and $2,499 a year—averaged only $217 net annual income from agriculture. But, in addition to this income, they averaged $2884 or 13 times more from other sources. (11, pp. 45-46).

The family type farm has already been mentioned as a starting point for farm definition. A possible division into four categories on this basis would be as follows:

(1) larger than family-type farms
(2) family-type farms
(3) smaller than family-type farms
(4) part-time and residential farms (27, p. 25)

The justification for this particular clarification is the argument that these four farm types fall in a different type of less-than-optimum income problem. One economist sees the causes of the income problems of commercial (family) farms as primarily a function of the circumstances
below. (27, p. 28).

(1) cost-price squeeze
(2) price instability
(3) increasing capital requirements
(4) marketing problems of farmers

These are faced by the larger farms. The income problems of low-income (less than family) farms stem from:

(1) limited resources
(2) difficulty of accumulating resources
(3) limited ability of operators

The main feature of the fourth group—the part-time and so called residential farmers, is its heterogeneity. With these farmers off-farm income in relatively important. Some in this group will be clear cut welfare cases.

Much of the writing on farm clarification is policy oriented. This is the case where a two way division is used by Koffsky and Grove. (19, p. 84). They refer to the commercial farms as defined in the 1954 Census and classify them as either high production farms or low production farms. The former group includes all those farms with a value of annual sales of $2500 or more. All other commercial farms are placed in the low production group. In terms of policy they point out that (1) the decline in farm numbers was mainly in low production farms and (2) off-farm income is of growing importance as a source of income to farmers especially for low-production farms.

A somewhat different type of farm clarification is that based on the type of farm. The 1959 Census lists 12 major types of farms. For
example, cash-grain, dairy, general and miscellaneous are four of these types. The type represents a description of the major source of income from farm sales. To be clarified as a particular type, a farm has to have sales of a particular product or group of products amounting in value to 50 percent or more of the total value of all farm products sold during the year. (32, p. 10).

A series which provides more information, yet is based on the same farm clarification idea as the one described in the preceding paragraph is that designated Costs and Returns on Commercial Farms. In 1959, 37 important types and sizes of commercial farms were considered; the data cannot be used in the same way as Census data but it does allow a comparison of resource returns between the different farm types and also a comparison of one farm type over time. In the case of the 1959 data, the farms to be considered were obtained by eliminating all units with farm sales less than $1200 and units with small acreages of crops except where poultry was the important enterprise. (35, p. 5). It would seem reasonable that several different clarifications are inevitable and necessary to meet different research requirements.

Three points with respect to farm definition and clarification should be made. Firstly, since there is such a wide spectrum of farming activity, it is necessary to be clear about the nature of the statistics which are being used in a particular instance. This point is comparable with the viewpoint of Frank Knight's that economic theorists should spell out the assumptions which are behind their analysis. (18, chap. 1).

Secondly, definitions and clarification boundaries cannot be dogmatically adhered to over time. Rather, these should be moved when the move
is justified. The most obvious justification for change would be a change in the price level.

Thirdly, high speed computers will increasingly allow the use of more complex clarification which will in turn be warranted by the increasing heterogeneity of agricultural operations.

Treatment of Capital Gains

The inclusion of capital gains and losses in income estimates has been discussed by several writers. The viewpoint of three writers on this particular topic may be appraised by examining them as expressed in three articles published recently. The three are D. M. Hoover, (13, pp. 929-940) Ernest W. Grove, (4, pp. 37-42) and Dale E. Hathaway. (7, pp. 367-376)

Grove (4, p. 37) points out that:

Some agricultural economists would agree that farm capital gains have been a clearly recognizable supplement to farm income in recent years, and most economists would probably concede that capital gains and losses have some bearing on the economic welfare of farm operators and their families, especially owner-operators.

Hoover, in his article which was published after that of Grove and that of Hathaway, points out that there has been increased concern about capital gains because of the importance of the general price changes over the last 50 years. He feels that the use of a measure using current dollars is misleading and proposes instead the use of a measure termed "real capital gains" or "purchasing power capital gains" which are defined as changes in the purchasing power of assets over some set of goods and services. This measure is obtained by using the index of prices paid by farmers for commodities used in family living. Considering farmer income, he compared capital gains on farmer owned assets with farmer income from all sources.
He found that capital gains were as high as 40 percent (in 1958) on income, and losses were as high as 28 percent of income (in 1953). On the average, capital gains and losses were 18 percent of income for the 20 year period 1940-1959. These seemingly high figures should be approached cautiously because capital gains are only potential until the assets involved are sold and other goods making up the standard of value are purchased; this is also the reason why it is not legitimate to simply add real capital gains to farmer income for the period under examination.

Additionally, a result of capital gains in one time period is a shift in expectations so that these capital gains may be largely represented by income in the following time periods. Therefore, to sum gains and income may result in considerable double counting. Continuing the analysis, it was found that because gains and losses offset each other considerably, real capital gains for two sub-periods, each covering a decade, were equal to less than 10 percent as large as average annual income. This was considerably less than the 43 percent reported by Grove (4, p. 33) and the 34 percent implied by Hathaway's figures for 1940 through 1956. At the same time, Hoover considers that his figures represent a maximum rather than a minimum addition to farmer welfare. Although he acknowledges that capital gains and loans will have an effect on farmer welfare, he explains the problems of capital gains being realized in future periods, and double counting.

Grove, (4, p. 37) found that increasing capital values in agriculture, exclusive of net investments in farm assets, averaged nearly $1000 per farm per year over the last 20 years, which means, as mentioned previously, that realized and unrealized capital gains in agriculture have averaged 43
percent as large as total net incomes from farming operations. Since he used data for all farms as defined in the 1959 Census of Agriculture, he suggested that capital gains for commercial farms would be higher. Like Hoover, Grove points out that capital gains and income cannot be added. The former is mainly unrealized, while the latter is largely realized. If the farmer does realize gains by selling his assets, the gains count for all the years that he has had the farm and not just the year of the sale.

From a theoretical point of view, some economists have argued that at least the realized capital gains and losses should be taken into account in measuring the size distribution on income. Grove suggests that when using aggregates, what counts is the degree of self-containment of the sector in question. Since agriculture cannot be described as self-contained, and since aggregate capital gains and losses are likely to be considerably different between farm and nonfarm sectors, "there is reason, therefore, to include realized capital gains and losses with income" (4, p. 40); an important fact which is relevant is that farm capital gains are much more widely distributed among farmers than are nonfarm capital gains among nonfarmers.

With respect to counting unrealized capital assets, any individual in an exchange economy could realize the current discounted equivalent of the goods which a property's value can be expressed in any time he chooses to liquidate his property. So, for any farm operator, the whole of his assets might well be added to his current income to indicate his purchasing power or "control" over goods and services. But here the major problem, as Hoover demonstrated, lies in obtaining reasonable estimates of capital gains.

It appears that the real capital gains estimates made by Hoover which compensate for price increases are more accurate than the higher capital
gains estimates of Grove and Hathaway. And both Gover and Hoover raise strong criticisms against including capital gains or losses in income measures used for welfare purposes, at least until more acceptable measures are available.

It seems likely that the trend in income statistics is to include more information and that the USDA will develop a workable measure of capital gains and losses.

**Distortions Resulting from the Aggregative Approach**

This section is based on an article by R. H. Masucci. (21, pp. 1-6) Regional data on farm income suggests that a U. S. average is not an adequate measure of income on which to base policy since regional differences may be large.

Two points are made. The first one concerns the relationship between farm income and nonfarm income of farmers. The second point has to do with an introduction of bias through mathematics.

Considering the first point, Masucci's figures show that where per capita income from farming operations is low, dependence on off-farm income is generally high. There appears to be an inverse correlation between the level of farm income and the percentage of total income obtained from off-farm sources. However, the extent to which farm families are able to supplement their farm income depends on the availability of job opportunities.

Mathematically, he shows that the use of U. S. aggregates biases gap measurement because of the weighting attached to nonfarm per capita income expressed on a regional basis. This mathematical bias is elimin-
ated by the use of regional data.

Hasuetti's conclusion is that: (21, p. 5)

One clear implication of these results is the necessity for greater geographical detail in per capita income data in order to properly gauge the magnitude of the disparity in income between farm operators and persons in nonfarm occupations for the country as a whole.

Expansion of Classification Criteria and Suggested Improvements

Hathaway's article also deals with the subject expressed in the heading of this section. The article suggests that conventional income measures do not take into account the fact that some farmers are able to establish substantial assets. He distinguishes between static and dynamic conditions. In dynamic conditions where we have changes in the real price of assets we must either include changes in net worth as income or we must use a more realistic figure for investment on which to calculate returns to capital (rather than using the current market value). (8, p. 371)

For example, a farmer might be considered poor if he has a low current income, yet he may have amassed considerable assets and when these are taken into account he can hardly be classed as poor. Also, nonfarm workers often receive substantial fringe benefits which are neither included in current income nor available to farmers. He concludes that the comparisons for welfare purposes between farm and nonfarm need to be expanded to include consideration of more than conventional current income. This is especially important when comparing different groups (e.g. different age groups).

Hathaway suggests that for welfare comparisons information is needed regarding the following: (8, p. 374)
(1) The age and other socio-demographic information of the population involved

(2) Their asset or net worth position

(3) Their claims or rights to insurance, pension funds and other programs that will provide them with future claims to goods and services

(4) plus the usual current income figures.

When discussing statistics required for resource allocation purposes comparative factor returns are needed. For this, we require the productive factors that produce the respective incomes in sufficient detail to enable us to adjust the results to achieve factor comparability. This implies detailed information with respect to:

(1) The characteristics of the individual income earner

(2) The assets that are involved in the production of his income

(3) The ownership of these assets

In addition, when considering resource allocation, Hathaway feels that more information is needed, regarding the current and probable future income and asset value of resources if they were transferred to other portions of the economy.
DESCRIPTION OF RELEVANT PUBLISHED FARM INCOME STATISTICS

USDA Farm Income State Estimates

This series is constructed using an indirect method in which U. S. agriculture is treated as a single large firm and the estimated have been built up using available data on production, prices, marketings and costs. This method was adopted because of the absence of direct reporting on anything like an adequate scale. Net income is derived by first computing gross income and then deducting aggregate expenses of production.

Historical background

Historically, this series was developed by the USDA to meet the need for income statistics created by the adoption of the parity price concept during the 1930's. The concept of parity income developed as an extension of the parity price concept. The original definition of parity income was changed in the Agricultural Adjustment Act of 1938 so that it read: (28, p. 483)

Parity, as applied to income, shall be that per capita net income of individuals on farms from farming operations that bears to the per capita net income of individuals not on farms, the same relation as prevailed during the period from August 1909—July 1914.

This definition of parity income differed from the earlier 1936 definition in four respects. (1) The term 'net' was used; it was applied to per capita income of persons not on farms as well as to that of persons on farms, (2) the 'purchasing power' provision in the 1936 definition was omitted in the 1938 definition, (3) the income of persons on farms included income from farming operations only, (4) the 'limitation as determined from statistics in the USDA' was omitted. (28, p. 483)
With the 1938 definition, the requirements of income statistics needed to calculate parity became less rigorous and more practicable since all that was required was a straightforward comparison between net income of individuals on farms from farming operations to the per capita net income of individuals not on farms.

The Agriculture Act of 1948 changed the definition of parity farm income again. Title II Sec 201 (2), defined parity farm income as follows: (28, p. 433)

(2) Parity, as applied to income shall be that gross income from agriculture which will provide the farm operator and his family with a standard of living equivalent to those afforded persons dependent upon other gainful occupation.

This new definition was freed from the restriction of the fixed base period but presented another problem, that of comparing levels of living in different occupations. This is much more difficult than the simple comparison of farm and nonfarm dollar incomes as required by the 1938 definition. Comparing levels of living of farm operators and their families with that of persons in other occupations is so difficult that although the present definition became effective January 1, 1950 it has not yet been computed and put into actual use.

The above discussion on parity income has been included to show the historical reason for the building up of this USDA farm income series. It also points to the requirements of such a series and the limitations which are encountered.

Sources of data and methodology used to derive net income estimates

Approximately how are gross income and aggregate expenses of production calculated? According to the Ag. Handbook: (34, p. 1)
The principal components of gross farm income are market values of farm products sold or used in the farm home. They have been built up commodity by commodity and State by State from estimates of production, disposition, and prices of the various commodities as these estimates are released (by the Crop Reporting Board of the Agricultural Marketing Service). These estimates in turn are generally based on periodic census enumerations supplemented by regular reports from farmers and special crop, livestock and price correspondents, and by records and reports of a wide variety of public and private agencies concerned with the inspection, storage, marketing, transportation, or processing of farm products.

In the case of production expenses, estimates are generally based on the quinquennial Census of Agriculture or on the results of special sample surveys, although many adjustments are necessary in the raw data. For years other than census or survey years, for the most part estimates have been interpolated or extrapolated on the basis of relative changes in available series that are similar or related to the expense item in question.

This series of statistics on farm income can be divided into two broad classifications of income. These are (1) income from farming (2) personal income of the population from all sources. The first gives the economic position of agriculture. The second, the statistics of the total income available to farm people for purchasing goods and services, give the economic position of the farm population as a whole. The latter are the income figures comparable with income statistics for the nonfarm population. (37, pp. 2-3)

The series of statistics on the income of farm operators from farming measures gross farm income, farm production expenses, and the net income to operators for their farm work (their own and that of their families) and for capital invested in farm land, buildings and equipment.

Realized gross income from farming is obtained by adding cash receipts from farm marketings, government payments to farmers, home consumption of farm products and rental value of farm dwellings.

Cash receipts from farm marketings include all sales of crops and
forest products and all sales of livestock except those by one farmer to another in the same State. It also includes the total value of price support loans of the Commodity Credit Corporation, minus redemptions.

Government payments to farms include the payments made under such programs as the 1961 Feed Grain, Wool Incentive, Soil Bank, Agricultural Conservation, and Sugar Act.

Home consumption of farm products consists of food and fuelwood consumed on farms where grown, valued at the average prices received by farmers for similar items.

Rental value of farm dwellings is the aggregate estimated rent that farm operators would have to pay for their dwellings if the dwellings were rented separately from farms.

These four are the components of realized gross income from farming. It is income from farming available for all purposes i.e. farm operation, family living and investment. It does not include all the income of farm operators; they also receive some from nonfarm sources, and net changes in inventories is not taken into consideration.

In order to get net income, production expenses are subtracted from realized gross income from farming. This gives realized net income.

Production expenses are all cash spent to operate the farm business, plus certain noncash items. The major divisions are (1) Current operating expenses for such items as fertilizer and lime, feed, seed, livestock, repair and operation of machinery and buildings, and wages for farm labor (2) Depreciation of capital equipment (estimates based on current replacement cost) (3) Taxes on farm property (4) Interest on farm mortgage debt (5) Net rent to nonfarm landlords.
Realized net income is the amount available for spending or investing after allowing for production expenses. It does not include nonfarm income or wages operators receive for working on other farms. It represents returns to the operator for his labor, the labor of his family, and his invested capital.

Total net income, which is a component of the national income figures of the Department of Commerce, is obtained from the above net income by adding net change in inventories to the latter.

Net changes in inventories represents the difference between this year and last year in quantities of each crop and livestock product held on farms, valued at average prices received by the farmers during the year just ended. An increase in inventories represents potential income, the exact amount depending on the prices at the time of sale.

In these series, statistics are for all units classified as farms by the USDA.

The series of statistics of the personal income of the farm population show all of the income of all the people who live on farms. This group includes those who also work in town, retired persons, and farm laborers who live on farms—as well as farm operators and their families. The series show for this group both the net income from farming and the net income from nonfarm sources.

**Total personal income of the farm population from all sources**

The main part of personal income of the farm population from farm sources consists of total net income from farming of farm operators on farms which represents the return to resident farm operators for their
capital, labor and management. To this net income figure is added farm
wages of laborers living on farms, consisting of wages and other labor
income for farmwork paid by farmworkers out of their gross income to
workers living on farms but excluding the farm wages of migrant and other
nonresident workers, and contributions of farm resident operators and
workers to social insurance.

Personal income from nonfarm sources is quite comprehensive in its
coverage. It includes wages, salaries and other labor income of farm
residents—-from nonfarm jobs, rents and royalties, dividends and interest,
net income from nonfarm business and professions, and transfer payments,
such as employment compensation and social security.

Adding personal income from farm and nonfarm sources gives the ag-
gregate total personal income of the farm population from all sources.
This can be compared with the personal income of the nonfarm and of the
total population.
USDA Estimates of Farm Costs and Returns

This type of data may be used for comparing the different types of commercial farms with respect to certain typical characteristics, and the typical costs and returns which may be expected on a farm type described. In addition, it may be used to look at the changing nature of the farm situation on any one type of farm. Usually, the size of the farm will increase each year but the costs, and especially the farm receipts, will vary up and down depending on the prices of inputs bought and outputs sold.

The concept used to arrive at the results is not based on census data; USDA average net farm income is obtained by treating the agricultural industry as if it were a single very large firm and calculating the gross farm income and subtracting the total of all costs from it to get the net income for the whole agricultural industry. Then to get the average net income for the average farm, this industry net income is divided by the number of farms. Instead, with the costs and returns data, the typical farm concept or Marshall’s representative firm concept is used.

Since these costs and returns refer to commercial farms, farms with sales of less than $1200 are excluded along with all those units with small acreages except where poultry is the important enterprise.

The major source of the basic data for the costs and returns series are: (1) the U. S. Census of Agriculture (2) rural carriers and mailed questionnaires sent to farmers and dealers by the Agricultural Estimates Division (3) enumerative field surveys and (4) research results and related data from State experimental stations and Federal agencies when data for individual farms are available or when group data meet the specifications
for farms by type, size and location. (35, p. 3)

The coverage of the costs and returns data has been steadily broadened since it was first introduced in the 1930's. The report published in 1961 contains estimates of costs and returns on 39 important types of commercial farms in 21 major farming areas. The information given about the farm types represents the results of operations on a typical farm of that specified type and size. In all instances, the typical farms are important operating units in the specified area and in most instances are the most common units.

In the Corn Belt, in which Kossuth County Iowa is located, there are 4 different types of farms listed: hog-dairy, hog-beef raising, hog-beef fattening and cash grain farms.

Consider the Corn Belt hog-beef fattening farms. Practically all of the cash receipts on typical farms come from hog and cattle enterprises. In 1959, the fattening operations consisted of an average of 171 hogs that are raised on the farm and 56 head of feeders that were purchased. In addition to hog and feeder numbers, descriptive information is given for the following: acreage, crops harvested, crop yields, livestock on farm Jan. 1, tractors on farm, total labor used and total farm capital Jan. 1. (35, p. 34) While these indicate the physical quantities involved and the capitalization, the dollar net income figure is the one which is the most relevant here. Total cash receipts are straightforward. Total cash expenditures include expenditures for feed and livestock purchased, fertilizer and lime, labor hired and taxes. In the case of the hog-beef fattening operation, the costs of purchasing a given lot of feeder cattle are carried forward one year to the year in which the lot is sold. Rent and
interest payments are not included because the series is considered on an owner-operator basis. Net cash farm income is obtained by subtracting expenditures from receipts. However, as an estimate of net income it can be improved upon by taking into account (1) value of perquisites and (2) change in inventory. The first reckons the value of those farm-produced goods which are consumed by the farm household together with a nominal rental on the farm dwelling, estimated at 8 percent, of the current value of the dwelling. In 1959 this item was $943. Value of perquisites is added to income. Change in inventory is divided into 2 parts: (1) crops and livestock (2) machinery and buildings. A crops and livestock inventory increase counts as an addition to income. In the case of machinery and buildings inventory change—obtained by subtracting annual depreciation of the group of items from current purchases of the group—it is entered on the expense side. An increase in the inventory, where current purchases exceed annual depreciation, reduces total farm expenses by that amount.

When perquisites and inventory changes are taken into account net farm income results. This is the annual return to the operator for his labor and management, to unpaid members of the operator's household for services rendered on the farm during the year, and to total investment in the farm regardless of ownership. This costs and returns series pursues the sources of net farm income further. The classical 3-way division of land, labor and capital is modified here by lumping land and capital together as investment and regarding labor as having management attached to it from the point of view of net returns data.

The further breakdown of net farm income is accomplished by the use of
the charge for capital concept. This concept may itself be discussed in
terms of 2 other concepts: opportunity cost and a return to an input. The
opportunity cost of a resource in the present context is the value of the
resource in the next best alternative use. One obvious place to utilize
money other than in the purchase of farm assets would be to place it in a
savings account where it could be expected to earn around 4 percent. When
a return to an input is considered, a similar idea appears. The money tied
up in farm assets could have been used to purchase resources in a number
of different enterprises. It is likely that the expected return would range
from a negative amount through several different positive returns in dif-
ferent enterprises. Economic theory indicates that inputs such as capital
will be moved from low return use to higher return use. The theory is ap-
licable in justification of taking a return to capital or making a charge
for capital.

However the concept is viewed, the charge must be an arbitrary one be-
cause farm assets vary greatly in kind and are purchased at different times
and at different prices. A straightforward charge for capital invested in
farming would be the current rate paid on farm mortgages. However, this
series uses 2 rates for estimating charge for capital.

The first is obtained by applying the interest rate in effect Jan. 1
charged for new loans by the Federal Land Banks in the respective areas to
the following farm assets: (36, p. 12)

(1) Estimated value of livestock in inventory
(2) Estimated value of farm machinery and equipment in inventory
(3) Estimated value of farm grown feed and seed in inventory
(4) Estimated value, Jan. 1, of land, buildings and improvements.
To this is added a charge for production credit where it is used.

The second estimate of capital charge is obtained by multiplying the farm investment values in the 4 categories listed above by 4.1 percent, which is the average rate charged by Federal Land Banks on farm loans outstanding during the years 1945-1958. A production credit charge is figured in the same way as in the first method.

With this type of time series data, the second charge for capital, based on the interest rate for outstanding rather than new loans, does a better job of estimating the charge for capital since farmers do not take on loans to acquire assets all at one time but over a period of several years. Some farmers may have 2 or more loans taken on at different times.

After the charge for capital has been levied, the residual part of net farm income is the return to operator management and operator and family labor used.
Iowa Extension Service Farm Business Summary of Iowa Farms

A similar series to the USDA farm costs and returns is that published in the Farm Business Summary of Iowa Farms by the Cooperative Extension Service of Iowa State University. (15, pp. 1-16) From the point of view of this study it provides information on returns from several different points of view. Farms are compared by economic areas, by the type of farm that they are and on the basis of profitability.

The report divided up the information provided into 4 parts which were: (1) trends in Iowa farm businesses (2) capital and labor requirements and returns for specialized farm businesses (3) the effect of size on costs and level of production and (4) resources used in the farm business by areas. Of these, the first two, and especially those parts dealing directly with returns, are of the greatest interest.

The costs and returns and other data were obtained from farm records which were selected to give approximately 25 records in each farm size group in each economic area of the state as defined by the U. S. Census report. In each of the tables in the farm business report the average of all farms represents a weighted average based on the number of farms in each size group and in each economic area. In making the weighting, only farms over 70 acres in size were considered.

Two income figures were examined; the first was net farm income defined as the net income to the operator on owner-operator farms and to the operator and landlord together on rented farms. The second was management return, obtained by assessing a charge on capital and family labor, which measures a return for management after deducting a charge for all these
other resources used in the business. Officially it was defined as net
farm income less 4 percent interest on value of land and improvements; 6
percent interest on capital in feeds, livestock and machinery; and wages
for operator and family labor.

Below is an accounting of the relevant information provided by the
tables presented in the report. In 1959, net farm income for Iowa farms
businesses was $4844, the lowest since 1955. Management return was -$770,
it being negative for the first time since 1955. Iowa was divided into
six economic areas; and the economic area of North Central Iowa, in which
Kossuth County is located, had a 1959 net farm income of $6295 and a man-
age return of $357, both higher than the corresponding figure in any
of the other five economic areas.

Another classification in the report provided data on the character-
istics of specialized farms in 1959. Seven types of specialized farms
were identified. For example, a hog and beef farm was defined as one where
the hog and beef increase was 70 percent or more of the total livestock
increase and in addition neither hogs nor beef was less than 25 percent of
the livestock increase. In 1959, net income was $6427 - less than that on
three specialized farm types and more than that on the other three types.
Management return was negative at -$725. The report also contained a divi-
sion of the farms in the sample in each farm type into high, medium and low
income groups on the basis of the 1953-1959 two-year average. With the hog-
bull farm type 32 percent were in the high income group; of the seven farm
types, this rated second behind specialized grain farms, in terms of the
percentage of such farms in the high income group. Finally, considering
management return by farm size the report indicated that in 1959 average
management return increased as farm size increased but only farms of greater than 360 acres had a positive management return. However, if instead of working with all farms, the low 1/3 farms and the high 1/3 farms were considered separately, it turned out that with the high 1/3 increasing farm size was associated with increasing management return but with the low 1/3, increasing farm size was associated with a smaller management return.

A Comparison of the Above Three Statistical Series

Above, three different series have been considered. All give some estimate of the income situation of Iowa farmers. The first considered, USDA farm income state estimates, was based on all those places defined to be farms by the census. It was therefore, more wide in coverage - in terms of the number of farms to which the series could legitimately apply to - than the other two. The USDA costs and returns series is based only indirectly on actual farms and seeks to provide a "profile" of a typical commercial farm of a certain type; farms with sales of less than $1200 were excluded from consideration along with all those units with small averages except where poultry was the important enterprise. In the case of the farm business summary series, the estimates were based not on a random sample of all farms, but on a sample based on those farmers who belonged to one of the record keeping organizations; if one assumes that member farmers are better farmers and (therefore more prosperous) on the average than those farmers that do not join, the estimates are biased in an upward direction. In addition, with this series, farms of less than 70 acres were deliberately excluded thus, if the researcher is interested in the best estimate of the net income figure for Iowa farmers, the state
estimate would seem to do the best job.

State estimates also take into account, as the other two do not, the often very significant non-farm income component of farm families. This part of income is especially important for those farm families that are not well established in an economic sense from income from their farming operation. The USDA costs and returns series neglect this non-farm income. This does not mean that some farms of the type described do not have operators who do not work off the farm. While the emphasis on the return from farming is perfectly satisfactory when looking into resource returns, from the point of view of comparative welfare, all income, and not just farm income must be considered. The personal income concept in the state estimates is comparable to that put out by the department of Commerce and takes into account all measurable major categories of income. Estimates of this are available for all the states: One drawback of this personal income concept is that it includes farm workers as well as farm operators.

The state figures do not provide net income nor personal income estimates on any smaller unit than a state. The farm business series does provide us with net farm estimates for each of six economic areas. It is the only one of the three which provides this. This same series also gives income figures for seven different types of specialized farms. These can be related to the four different types of farms in the Corn Belt described in the USDA costs and returns series. Going back to the farm business summary series, additional information on the profitability of farms was provided which was not immediately available from the other two series.

Unlike the first series considered, the two different cost and return series both make some allocation of net farm income between the resources
used. One uses the charge for capital concept, while allocates part of
farm income as a return to capital based on a certain interest rate and
leaves a return to operator and family labor and management. The other,
in addition to making a charge for capital also leaves a charge for family
labor, leaving a management return. In 1959, on Iowa farms, this return
to labor and/or management was small or negative in amount.

For comparative welfare measurement, the two series which consider only
net farm income must be considered incomplete although they provide ac-
curate information on the farming operation. The state estimates are more
complete but suffer from the drawback of all averages representing a large
area or large units. This is the problem of the variability which exists
behind the averages. The Southeast part of Iowa is generally thought of as
being a lower income area than the Northcentral part but this cannot be
seen by looking at the average personal income of the Iowa farm population.
THE VALUE OF IOWA COUNTY INCOME DATA AS A MEANS OF ESTIMATING
THE INCOME POSITION OF AGRICULTURE

The Rationale for Examining County Data

The USDA income series based on aggregate data gives statistics on net income on both a national and state basis, but does not provide a breakdown by counties within each state. In the same way that national average net income covers up wide differences in income between the states, so state average net income covers up differences between the counties. Some counties in North Central Iowa, for example, have a higher average net farm income than some counties in South Eastern Iowa. Within one county, also, there may be a wide range in net farm income with some farms with a large amount of resources producing a net income of more than $10,000 while on the other end of the scale some small farms with comparatively few resources may produce a net income of less than $2,500.

The sample considered gives an indication of the level of income in 1959 in the county and also gives an indication of the variation in net income which exists among both farmers and those people who are not primarily engaged in farming.

Compared with the USDA income series based on aggregate data which builds up net income figures in an indirect manner, the sample data is obtained in a direct manner whereby income figures are obtained by questioning rather than by first obtaining figures in gross income and expenses and then subtracting the latter from the former.

In addition, the sample questionnaire includes specific information on all other sources of income in addition to income from farming opera-
tions. Similar information is not given with the cost and returns series or with the farm business summary series which concentrate on income from farming operations. In many cases, off-farm income makes up a significant percentage of total family income and is therefore an important consideration when welfare considerations are involved.

In addition to income figures, the survey provided information on the characteristics of the family and of the business in which the family head is engaged. Much of the information obtained by means of these questions is also available from either the Census of Agriculture or the Census of Population. Some additional information is also obtained from the sample questions which would not be found in either of the two census publications. Information on family and business characteristics is useful in setting up cross-sectional tables.
None of the data considered up to this point in the presentation has produced statistics at or below the county level, when considering the statistics set up on an area basis. The costs and returns data do study representative farms of different types, several of these types being found in Iowa. Also the Farm Business Summary analyses the characteristics of Iowa farms that take part in extension record keeping, and classifies and analyses them in various ways. The income estimates and related estimates presented below are built up from a survey which was taken in 1960.

The survey was part of a research project entitled Factors Related to Use of Credit Resources by Rural Families. This study was approached by obtaining primary data by means of a 34 page questionnaire. The questions were designed to answer the question how well do families adjust to income loss; in other words the study was a gap measurement study. The project was actually a joint project with Missouri, one county being selected for study in each state.

In Iowa, the study was a cooperative one worked on jointly by the Iowa State Home Economics Department and the Economics and Sociology Department. The county selected was Kossuth county. The sample was drawn by the Statistical Laboratory of Iowa State University by area sampling methods. The farm sample was drawn using the master sample of agriculture; the nonfarm part of the sample was drawn after personnel from the Statistical Laboratory had cruised the town of Algona (with a population of about 6000) to
create the frame from which to sample. Completed schedules were obtained from open country families in the county, and families living in Algona.

The questionnaire consists of questions designed to establish income, costs, assets, liabilities, and sources of funds in the case of both short and long term emergencies. This study is concerned with estimates of real income, the sources of the component parts of real income, and the characteristics of each of the families (and their farms if they are farmers) which are considered of importance to the study such as age of husband, number of acres owned and so on. In other words, this study uses that part of the questionnaire which gives as complete an income picture as possible and, in addition, those parts which give the corresponding relevant characteristics which allow the necessary analysis of the income data.

The necessary information on income is set up in a way that is very useful from the point of view of this study; all of the major components of a family's income are identified and therefore it is possible to see how different types of income e.g. net business income, salary income, investment income make up the total family income. Particularly important from the point of view of farm families is the breakdown of total family income into farm and nonfarm income.

In contrast to the three statistical series studied, these income figures arrived at for the sample are obtained by direct reporting.

Two limitations placed on the sample restricted the population to be sampled from to those couples married before January 1st, 1959 living at the place of residence and where less than one half of the family income was from retirement programs (either government or private) in the preceding year. By ignoring bachelor farmers nonrandomness enters if the
whole population of farmers in the country is considered. Likewise, since
the study was undertaken by the original users to find out the financial
security situation of families which are actively employed, it is likely
that farms which would fall into the Census category of part-retirement
are excluded from the sample.

Description of Kossuth County, Iowa

Kossuth County is in the uppermost tier of counties in Iowa. It is
the only double county in Iowa and as such is about twice as large in area
as the test. The U.S. Department of Commerce divides each state into eco-
nomic areas. Kossuth County is located in the North Central Iowa economic
area. It is a good farming area, but at the same time, it is some distance
from any large centers of nonfarm economic activity.

A county can be described in many different ways. What is concentrated
on here are the parameters and statistics of the county which are relevant
to the income position of families living in the county, especially farmers.
Also, since this study is primarily concerned with the farm families' returns
and welfare, those statistics which have some bearing on off-farm job oppor-
tunities for farm operators—on either a part-time or a full-time basis—are
looked at as well.

In 1959, the year with which we are primarily concerned, the Census
of Agriculture counted 2906 farms in Kossuth County*. This was a decline
from 3070 farms in the 1954 Census although 21 farms of this decrease were
due to the change in farm definition between the 1954 and 1959 Censuses.
The average size of the farm in the county in 1959 was 210.9 acres; in
1954 it was 197.9 acres. The increase in farm size combined with a de-

*This figure and those in the following discussion are taken from the
Iowa volume of the terms of Agriculture (31).
crease in farm numbers is a trend which has been going on since the late 1930's and is likely to continue for some years to come. In 1959, the average value of land and buildings per farm was $67,908.

Considering farms of different acreages, there are 3 size classes with high frequencies:

<table>
<thead>
<tr>
<th>Farm Size</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>140-179</td>
<td>922</td>
</tr>
<tr>
<td>220-259</td>
<td>437</td>
</tr>
<tr>
<td>260-499</td>
<td>668</td>
</tr>
</tbody>
</table>

Of the 2906 farms, 2813, or 96.3 percent, are commercial farms with an average size of 221.8 acres and an average value of land and buildings per farm of $72,438. Pursuing the farm economic classification breakdown further the commercial class of farm with the highest frequency was Class III where the value of farm products sold is $10,000 to $19,999; the frequency was 1395, more than twice the frequency of Class IV (value of products sold of $5,000 to $9,999). There were 130 other (non-commercial) farms. 65 were classified as part-retirement and 65 as part-time.

Turning next to the classification by type of farm, only 6 types were represented in Kossuth County and they are shown below:

<table>
<thead>
<tr>
<th>Farm type</th>
<th>Farm numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash-grain farms</td>
<td>1030</td>
</tr>
<tr>
<td>Poultry farms</td>
<td>55</td>
</tr>
<tr>
<td>Dairy farms</td>
<td>65</td>
</tr>
<tr>
<td>Livestock farms other than poultry and dairy farms</td>
<td>1243</td>
</tr>
<tr>
<td>General farms</td>
<td>420</td>
</tr>
<tr>
<td>Miscellaneous and unclassified farms</td>
<td>130</td>
</tr>
</tbody>
</table>

The two largest classes are cash-grain farms—35.44 percent, of the total—and livestock farms other than poultry and dairy farms—42.77 percent, of the total.
So far the county has been considered from the point of view of the farms that are contained in it. In this income study, the emphasis is on income earned by a family unit or by a person, and therefore the characteristics of the farm operator need to be considered along with that of the farm.

In 1959, 963 of the 2906 farm operators were full owners; there were in addition 443 part owners, 2 managers and 1498 tenants. The proportion of tenancy was 51.5 percent. The average age of all those farmers who reported their age was 45.6 years; this, by itself, has implications for the ability of farm operators to find off-farm employment.

There were 2813 operators of commercial farms. 561, 19.9 percent of these reported working off the farm in addition to farming. 86, 3.06 percent, worked off the farm for 100 days or more and 35, 1.24 percent, reported that other income of the family exceeded the value of agricultural products sold.

When all the farm operators are considered, 644 operators—that is 83 of the 130 farm operators classified as operating part-time and part-retirement farms in addition to those who farm on commercial farms—reported working off their farms. 176 worked off the farm for 100 days or more and 146 reported that other income of the family exceeded value of farm products sold.

The percentage of farms with farm sales less than $5,000 was 6.7 percent which was the lowest percentage for any county in Iowa. The farm operator level-of-living index was 141 in 1959 based on a U. S. county average in 1959 equal to 100. This compares with the Kossuth County average of 103 in 1950.
The median county family income in 1960 was $3986; this was a 27.4 percent increase over the 1950 income of $3129.

However, in spite of the increase the county went down 44 places on the family median income ranking between 1950-1960. This figure again suggests the movement from farm to nonfarm activity. Kossuth County income increased but other counties were moving towards other than agricultural activities. In 10 years from 1950-1960 the manufacturing employment in the county increased 67.4 percent, from 325 to 544. The rank on the number employed in manufacturing in each county was 54 in 1960 and 38 in 1950. Construction employment for the county was 407 in 1960 and 517 in 1950; this was a 21 percent decrease over the 10 year period.

In summary, Kossuth County is a good agricultural county where the farming conditions are better than average and where this is reflected in the relatively small numbers of other farms and Class VI farms. The county is probably not likely to develop any nonfarm activity in the near future which would cause those smaller farmers, who would like to quit if they saw their way clear to, to leave farming in favor of a nonfarm job.

Procedure Used

The tables and numbers that follow in the next section are the results of the procedure used. They resulted from the study of the 202 questionnaires. Not all the information available on the 34 page questionnaire was used; certain sections on each one were used in their entirety while some answers used were drawn individually from the pages. The income

*Taken from the 1960 Census of Population as are the other numbers or data in the following discussion (33).*
figures were of great importance and were tabulated with the breakdown in as much detail as possible; note was made of the different specific employ-
ments encountered within the main division of income sources.

Cross classification tables were made wherever it was thought that the table would produce useful results.

Regression analysis was employed on 2 occasions to test hypotheses. These regressions are described in more detail later on.
ANALYSIS OF KOSSUTH COUNTY DATA

The unit used where averages are required is the family. Typically, the husband is the primary income earner although this may not be true in certain years where, for example, the husband is a farm operator and through some natural occurrence (e.g., bad weather causing crop failure) has a low or even negative net farm income which is smaller than the income of his wife in that particular year.

The sample consisted of 202 useable questionnaires which were obtained originally on the basis of division into 2 groups, one group containing those families that lived in the open country, the second group those who lived in the town of Algona. The original split into urban and rural groups on the basis of residence does not imply any automatic division into farm and nonfarm. Some people classified as farmers live in the town while some others who work off the farm live in the open country.

A system of classification was set up to place each one of the family heads into either the farm operator group or the off-farm employment group. While many of the family heads were placed in one of the two groups without any trouble, by examining the answers given on the questionnaire, there exists a relatively large range of livelihoods which consist partly of farming activity and partly of off-farm activity where it is not possible to make a quick, clear-cut decision as to whether or not a man should be called a farmer who works off the farm part-time as, say, an auto mechanic or an auto mechanic (or a teacher or an elevator manager) who also engages in some farming activity. In this study this problem is met by paying particular attention to 2 parts of the questionnaire. Firstly, the front
Part F requires the interviewee to answer the question: "What type of business was the major income earner engaged in?" Those people who considered themselves farmers or farm operators would so state at this point. There was a certain amount of possible confusion here since the major business, rather than the major occupation, was asked for and some farm hands—as well as those people who considered themselves farm operators—answered "farming" to this question. What this study means by a farmer is, not a farm hand who supplies hired labor only, but a farm operator who makes management decisions and who, in this sample, is either an owner operator or a tenant operator. Not counting those farm hands who specified their type of business as farming in one part it would seem that the probability is reasonably high that any person who so specified would in fact operate a business which would meet the 1959 Census of Agriculture definition of a farm.

Another part provides information on income source classification which gives a further clue as to how the division should be made. It asks the question: "What was the source of one-half or more or your family income in 1959?" Seven categories are given:

(1) Your business (self-employed)  
   (a) Farm  
   (b) Nonfarm

(2) Rental from Property  
   (a) Farm  
   (b) Nonfarm

(3) Wages, Salaries and Commissions  
   (a) Farm  
   (b) Nonfarm

(4) Services and Professional Duties

(5) Investments (stocks, bonds, etc.)

(6) Other (write in)

(7) Combinations, excluding #1

If a person checks the (a) part of the first category, one could
conclude without question that he is a farm operator. However, problems arise with certain other of the 7 categories if the interviewee checks #7 indicating that one half of his 1959 family net income was made up of more than one of the categories 2 through 6. Here, it is possible that although a combination of these income sources adds up to greater than half the total net income of the family, farming operations were engaged in as well. In this case it is necessary to look at the detailed income breakdown on the code sheets of the family in question and check to see if the largest fraction of income is from farming operations. If it is, or would normally be expected to be, then the family head is classified as a farm operator in spite of the fact that a combination of nonfarm income makes up greater than half the total family income. Even with such a procedure for deciding who should be classified as a farm operator and who should be classified as working at some other occupation other than farm operator, a certain unavoidable arbitrariness in classification creeps in with borderline cases where a value judgement based on all the information that is available must be made.

For example, a 42 year old man owns and operates 120 acres of land. In 1959, his net farm income was zero, he did not have any other business income, and received only $300 wage income from a job as an electrical repairman. Although his net farm income was less than another major income component, wage and salary income, it was decided that he depended mainly on his farming operations for income and that, on the average, this income would be greater than that from any other major income source. He was therefore classified as a farm operator and his family placed in the farm family group. Several other questionnaires were examined in like manner and a
decision made as to which of the 2 groupings they should be placed in.

The classification into farm and nonfarm resulted in the sample of 202 being divided into 2 groups as follows: 120 in the farm group and 82 in the nonfarm group.

Family cash income and family income
for the Entire Sample

The main interest in this study focuses on farm income and farm income statistics. While this means that the income situation of families where the family head is not a farm operator is not looked at in any great detail a valid comparison to be made is between the income of the whole sample, the income of the farm group and the income of the nonfarm group.

Family cash income is the total dollar or money income of the whole family. It does not include any items which have a dollar value imputed to them. It is a measure of the "immediately applicable" purchasing power of the family. For the whole sample, aggregate family cash income was $46,832; average family cash income was $5,182. (range: $0 - $26,900)

Family income is an extension of family cash income. It adds to the latter the value of home produced food consumed in the home. Average family income was $5,460. (range: $375 - $26,900) This is $278 higher. Most of the farm families received a significant amount of extra-income equivalent in the form of food as did several of the nonfarm families.
Family Cash Income and Family Income of Nonfarm Families.

For the nonfarm group, the aggregate family cash income was $478,250. With 82 families in this group, the average family cash income was $5,832, higher, as might be expected, than the average for all the sample families.

Table 1. Family cash income

<table>
<thead>
<tr>
<th>Group</th>
<th>Number in Group</th>
<th>Aggregate Income</th>
<th>Average Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>202</td>
<td>1,046,832</td>
<td>5,182</td>
</tr>
<tr>
<td>Nonfarm</td>
<td>82</td>
<td>478,250</td>
<td>5,832</td>
</tr>
<tr>
<td>Farm</td>
<td>120</td>
<td>556,183</td>
<td>4,635</td>
</tr>
<tr>
<td></td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

For the nonfarm group, the aggregate family cash income was $478,250. With 82 families in this group, the average family cash income was $5,832, higher, as might be expected, than the average for all the sample families.
Income of Farm Families

The farm group of 120 had an aggregate family cash income of $556,183; the average was $4,635. (range: $353 - $19,340) The corresponding figure for the nonfarm group was $5,832. This means that in this particular sample, average family cash income of farm families was approximately 4/5 that of nonfarm families. This fraction may be compared with the national figures where one of the commonest comparisons which is made between average income of the 2 groups indicates that average farm income is approximately 2/3 that of average nonfarm income.

So far the source of income has not been considered. Table 2 indicates, for farm families, the division of family cash income into net farm income and nonfarm income. Nonfarm income, therefore, is here the difference between family cash income and net farm income. Aggregate net farm income was $466,338; the average was $3,886. (range: -$900 - $14,000) This is 84 percent of average family cash income, leaving 16 percent of the income to be provided from other than farming operations.

Nonfarm income was reported by only 72 out of the 120 farm families. It amounted in aggregate to $89,845. For all of the farm group (120) the average nonfarm income was $749. (range: $0 - $12,140). For just the 72 reporting this income averaged $1,248.

Nonfarm Income

The division between net farm income and all other income obtained by farmers has been examined in the preceding paragraph and the next step is to examine nonfarm income in more detail. This nonfarm income was divided into 4 categories, and what was considered to be of importance was the
Table 2. Relationship between family cash income, net farm income and nonfarm income for farm families

<table>
<thead>
<tr>
<th>Income Source</th>
<th>No. of Persons Reporting Income From This Source</th>
<th>Aggregate Income</th>
<th>Average Income (1)(^A)</th>
<th>Range</th>
<th>Average Income (2)(^B)</th>
<th>% of Average Family Cash Income(^C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family cash income</td>
<td>120</td>
<td>556,183</td>
<td>4,635</td>
<td>+19,340</td>
<td>4,635</td>
<td>100</td>
</tr>
<tr>
<td>Net farm income</td>
<td>120</td>
<td>466,338</td>
<td>3,886</td>
<td>+14,000</td>
<td>3,886</td>
<td>84</td>
</tr>
<tr>
<td>Nonfarm income</td>
<td>72</td>
<td>89,845</td>
<td>1,248</td>
<td>+12,140</td>
<td>749</td>
<td>16</td>
</tr>
</tbody>
</table>

\(^A\)Average income for the number of farm operators reporting income from this source.

\(^B\)Average income for all farm operators.

\(^C\)Refers to average income (2).
average amount of income from each source and the frequency of its occurrence in farm families in the sample. The 4 categories which this farm income was divided into were as follows: net business income, wage or salary income of farm operator, wage or salary income of farm operator's wife and a residual category—designated other income. Each of these will be examined in turn starting with net business income.

Only 5 farmers reported net business income. This is income coming from a business such as a farm implement dealership or custom shelling where the farmer does enough of it for him to think of it as a business separate from his farming operations. Aggregate net business income for the 120 farmers was $12,000. The average when considering the 5 farmers reporting was $2,400 (range: $1,000 - 3,500). Considering all 120 farmers the average income was $100. This latter amount was 2.2 percent of average cash income of farm families.

The second category, wage or salary income of the farm operator, was reported by 10 farmers. Taking the aggregate amount of $6,596, the average for the 10 was $659 (range: $47 - 5,769). Averaging over all the farmers in the sample, the amount was $55. This represents only 1.2 percent of average family cash income of farmers. Such jobs as truck driver, salesman and carpenter were reported.

Wage or salary income of farm operators' wife, reported by 9 farmers, amounted to $13,141 in aggregate. For the 9, average income was $1,460 (range: $50 - $3,400). For all the sample farmers, the average income contributed by the wives was $110; this was 2.4 percent of average family cash income. Typical jobs were school teacher and store clerk.

The last category was officially called "other income". The official
list of the "other income" components is given below:

- Income from rental property
- Roomers and boarders
- Dividends and interest
- Annuities and Insurance trust funds and Retirement plans
- Gifts and inheritances
- Social security and other federal, state or local benefits
  and pensions
- Bonuses
- Unemployment benefits
- Nonclassified

The large number of parts in other income explains the fact that, of
the 16.2 percent that average nonfarm income of farm families is of all
average income of farm families, over 60 percent of it is other income.
The aggregate amount of other income was $58,118 with 64 farmers reporting.
The average for only these 64 was $908 (range: $19 - $12,140); it was
$484 for the 120 farmers. In terms of the contribution to average family
cash income, this $484 represented 10.4 percent of it. The above informa-
tion is summarized in Table 3.

Table 4 provides a breakdown of other income indicating the importance
of its various components. Gifts and inheritances contributed $223, or
46 percent of the average other income figure of $484. It is true that
this source of income might be viewed as being unusual and therefore not
to be included, yet gifts and inheritances are likely to be given every
year by different people and, if given in the form of money, can be re-
garded as income. The next income source to be considered is the income
from rental property. This contributed 25 percent to average other income;
in dollar terms this was $120. Next, in order of decreasing importance,
was income from dividends and interest which contributed $84 to average
family cash income; this was 17 percent of average other income. These 3
Table 3. Sources of nonfarm income of farm families

<table>
<thead>
<tr>
<th>Sources</th>
<th>No. of Persons Reporting Such Income</th>
<th>Aggregate Income</th>
<th>Average Income (1) (^a)</th>
<th>Range</th>
<th>Average Income (2) (^b)</th>
<th>% of Average Family Cash Income (^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Business Income</td>
<td></td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Wage or Salary Income of Farm Operator</td>
<td>5</td>
<td>12,000</td>
<td>2,400</td>
<td>1,000</td>
<td>100</td>
<td>2.2</td>
</tr>
<tr>
<td>Wage or Salary Income of Farm Operator's Wife</td>
<td>10</td>
<td>6,586</td>
<td>659</td>
<td>47</td>
<td>55</td>
<td>1.2</td>
</tr>
<tr>
<td>Wage or Salary Income of Farm Operator's Wife</td>
<td>9</td>
<td>13,141</td>
<td>1,460</td>
<td>50</td>
<td>110</td>
<td>2.4</td>
</tr>
<tr>
<td>Other Income (^d)</td>
<td>64</td>
<td>58,118</td>
<td>908</td>
<td>19</td>
<td>484</td>
<td>10.4</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>89,845</td>
<td>1,248</td>
<td>19</td>
<td>749</td>
<td>16.2</td>
</tr>
</tbody>
</table>

\(^a\)Average income for the number of farm operators reporting income from this source.

\(^b\)Average income for all farm operators.

\(^c\)Refers to average income (2).

\(^d\)Other income is the sum of income from rental property; roomers and boarders; dividends and interest; annuities, insurance trust funds, retirement plans; gifts, inheritances; social security, other federal, state or local benefits and pensions; bonuses; out-of-pocket expenses of running a farm business; and nonclassified.
Table 4. Sources of nonfarm income exclusive of wages, salaries and net business income

<table>
<thead>
<tr>
<th>Sources</th>
<th>Aggregate</th>
<th>Average</th>
<th>% of Average Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rental Property</td>
<td>$12,445</td>
<td>$120.37</td>
<td>24.85</td>
</tr>
<tr>
<td>Roomers and Boarders</td>
<td>1,130</td>
<td>9.42</td>
<td>1.94</td>
</tr>
<tr>
<td>Dividends and Interest</td>
<td>10,123</td>
<td>84.36</td>
<td>17.42</td>
</tr>
<tr>
<td>Annuities, Retirement Plans, etc.</td>
<td>347</td>
<td>2.89</td>
<td>0.60</td>
</tr>
<tr>
<td>Gifts and inheritance</td>
<td>26,720</td>
<td>222.67</td>
<td>45.98</td>
</tr>
<tr>
<td>Social Security</td>
<td>4,372</td>
<td>3.64</td>
<td>7.52</td>
</tr>
<tr>
<td>Bonuses</td>
<td>411</td>
<td>3.43</td>
<td>0.71</td>
</tr>
<tr>
<td>Unemployment Benefits</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nonclassified</td>
<td>570</td>
<td>4.75</td>
<td>0.98</td>
</tr>
<tr>
<td>Total</td>
<td>58,118</td>
<td>434.32</td>
<td>100.00</td>
</tr>
</tbody>
</table>
together—income from gifts and inheritances, rental property and dividends and interest—accounted for 86 percent of the average other income. If social security income was added to this, 96 percent was accounted for.

Regression Analysis

Regression of net farm income on all other income

In this chapter devoted to the analysis of Kossuth county data, the other sources and amounts of income received by farmers in addition to net farm income has been stressed. In the earlier chapters dealing with the published income statistics, the importance of this type of income was likewise stressed. In both the farm costs and returns series and the Iowa Extension Service Farm Business Summary series, nonfarm income was not considered for the good reason that both are concerned primarily with the returns to the farm firm and to the operator's labor and management which he puts into the firm. Another point is that the farms considered in both are relatively well off in terms of income produced from them since they are largely commercial farms. In other words, these series do not concern themselves with the small farmers who for various reasons do not derive a large family income from their farming operations. One would not expect the farmers described by these 2 series typically to have large amounts of income from nonfarm sources; but this does not mean nonfarm income is somehow excluded from the farms considered. The first series, USDA farm income state estimates, does include nonfarm income. Personal income of the farm population includes income from farming and nonfarm sources. In recent years, that part from nonfarm sources has been about 1/3 as great as the income from all sources. This information on personal income and the sample
results themselves suggest the worth of a regression of nonfarm income on net farm income.

Table 5 is the basis of the regression. Ten classes were set up on the basis of net farm income. The frequency distribution is bimodal. Twenty-two farmers had a net farm income that fell in the $2001 - $3000 class. There were 23 farmers in the $4001 - $5000 class. The distribution was also skewed with 94 farmers, 78 percent of the total number of farmers in the sample, reporting a net farm income of $5000 or less. The last 4 classes, starting with the $6001 - $7000 class, had frequencies of 3, 4, 2 and 7 respectively and from the point of view of speculating on a trend by observing Table 4 they were ignored.

No trend was observable from the table as higher net income classes are considered and it was not possible to deduce any straightforward relationship between net farm income and nonfarm income. In this situation, regression analysis allows a hypothesis with respect to the relationship between the 2 kinds of income to be tested.

Two hypothesis were considered, both based on the idea that the less income a farmer gets from farming the more likely he is to have other sources of income. When a certain level of farm operation is reached, the farmer is likely to be well occupied with his farming and therefore less likely to have time for other nonfarm activities.

The first hypothesis is: Farmers receiving a relatively small amount of income from farming typically have a large nonfarm income (large for a person engaged in farming). As net farm income increases, the amount of nonfarm income received decreases.

The second hypothesis has the same first part and then continues: As
Table 5. Average net farm income, average family cash income and average nonfarm income of farm families: by net farm income classes

<table>
<thead>
<tr>
<th>Net Farm Income Class</th>
<th>Frequency</th>
<th>Average Net Farm Income</th>
<th>Average Net Farm Income to Average Non-Farm Income</th>
<th>Average Family Cash Income</th>
<th>Average Non-Farm Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1000</td>
<td>16</td>
<td>$392</td>
<td>$0.61</td>
<td>$1,039</td>
<td>$647</td>
</tr>
<tr>
<td>1001-2000</td>
<td>16</td>
<td>1,665</td>
<td>2.82</td>
<td>2,955</td>
<td>590</td>
</tr>
<tr>
<td>2001-3000</td>
<td>22</td>
<td>2,697</td>
<td>3.95</td>
<td>3,380</td>
<td>683</td>
</tr>
<tr>
<td>3001-4000</td>
<td>17</td>
<td>3,577</td>
<td>9.24</td>
<td>3,964</td>
<td>387</td>
</tr>
<tr>
<td>4001-5000</td>
<td>23</td>
<td>4,632</td>
<td>9.69</td>
<td>5,110</td>
<td>478</td>
</tr>
<tr>
<td>5001-6000</td>
<td>10</td>
<td>5,708</td>
<td>7.20</td>
<td>6,501</td>
<td>793</td>
</tr>
<tr>
<td>6001-7000</td>
<td>3</td>
<td>7,000</td>
<td>9.30</td>
<td>7,753</td>
<td>753</td>
</tr>
<tr>
<td>7001-8000</td>
<td>4</td>
<td>7,403</td>
<td>1.52</td>
<td>12,253</td>
<td>4,360</td>
</tr>
<tr>
<td>8001-9000</td>
<td>2</td>
<td>8,771</td>
<td>16.24</td>
<td>9,311</td>
<td>540</td>
</tr>
<tr>
<td>9001 &amp; up</td>
<td>7</td>
<td>11,648</td>
<td>12.07</td>
<td>12,612</td>
<td>965</td>
</tr>
</tbody>
</table>
net farm income increases, the percentage that nonfarm income is of all income decreases.

The regression analysis of all 120 cases revealed that there was no significant relationship between nonfarm income and net farm income, for the correlation coefficient was 0.121801 which was nonsignificant at the 5% level. From these results, the first hypothesis cannot be accepted since no relationship was evident.

It might be that the low correlation coefficient for the farm part of the sample obscures information on a class basis. Certainly if one looks at the highest class and the lowest class of average net farm income, there is a marked difference between the ratio of net farm income to nonfarm income. In the low class the ratio of net farm income nonfarm income was 0.61; in the highest class the ratio was 12.1.

Apparently the major variation in the ratio of net farm income nonfarm income was not explainable by the simple hypothesis that as average net farm income increases the reliance on nonfarm income steadily decreases. Other patterns of income have entered in the middle classes of average family cash income.

These findings contradict somewhat the findings based on USDA estimates which indicated that farms with a low net farm income have a higher nonfarm income. (37, p. 50)

An important factor in the amount of nonfarm income received by farmers is the opportunities for nonfarm employment. It is possible that these are a typical in Kossuth County.

Another possible explanation of the lack of definite relationship in these data is the division of the classes which was made. The division
was an arbitrary one as most such divisions are and a different set of classes might produce different interpretations.

Sample size is also an important factor. Only 120 observations were considered here. This is a reasonable number, but problems arise when individual classes are interpreted. Thus in the $3001 - $9000 class there were only 2 observations and therefore no general conclusions can be considered for farms falling in this net farm income class.

Regression of Net Farm Income on Acres Operated

The orientation of this study has been toward the comparison of different farm estimates, none of which have estimates at the county level and an evaluation of income information taken from Kossuth county. With reference to the latter, particular attention has been focused on the different sources of income of farm families, the relationships between the different sources and the variables which affect quantity and availability of these different sources. The relationship between net farm income and non-farm income of farm families was considered above. This section considers the relationship between acreage operated and net farm income.

It is recognised that some of the 120 farms probably had abnormally high or low incomes in the sampling year. Indeed, the time series considered showed that in 1959, farm incomes in the corn belt were lower than the preceding two years. However, quantities are not of concern here, but rather the relationship that might exist between farm size and income. A reasonable hypothesis would seem to be that as farm size increases, so does income.

Once such a relationship has been established, it might be of use in
helping to identify those farms that should be expanded to a larger resource base or farmed on a part-time basis. In the case of such a farm, if the latter alternative is chosen, the availability of farm employment again becomes of significance.

Table 6 shows that when the farm size classes in the table are used there is no particular relationship between average net farm income and average acres operated. The correlation coefficient was 0.192733 and was not significant at the 5% level. This indicates the lack of a strong linear relationship. However, Table 6 suggests that larger acreages have a greater net farm income than smaller acreages, which would probably be significant if the farms were divided into two groups, those under and those over 200 acres.

By itself, the number of acres operated does not, even in as limited an area as Kossuth County, give much of a clue as to the number of acres which represent an adequate land base for farming operations.

The reason is that several other variables need to be taken into consideration when evaluating the productivity of a farming unit when seeking for an upward trend. However, there are not enough observations to allow a breakdown into farms of different net worth or different types of operations.

Coming back to the discussion of the farmer's income from farm and nonfarm sources, it could be that farmers strive for a certain family income. If they are not able to reach it by income from their farming operations they are likely to put a high premium on finding other sources of income. If there is no employment available, in the long run such farmers will find income inadequate and will move off the farms. If, however, off farm work is available they may be satisfied with supplementing their income from farming in this way. When the farmer's farming operations are sufficiently large and a certain total income threshold has been reached, the incentive to seek out income from off farm employment decreases.
Table 6. Average number of acres operated, average net farm income and average age of operator: by acres-operated classes

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0-100</td>
<td>10</td>
<td>52</td>
<td>3,035</td>
<td>55</td>
</tr>
<tr>
<td>101-200</td>
<td>59</td>
<td>162</td>
<td>3,302</td>
<td>47</td>
</tr>
<tr>
<td>201-300</td>
<td>23</td>
<td>250</td>
<td>4,745</td>
<td>44</td>
</tr>
<tr>
<td>301-400</td>
<td>20</td>
<td>340</td>
<td>4,715</td>
<td>44</td>
</tr>
<tr>
<td>401-500</td>
<td>6</td>
<td>450</td>
<td>4,792</td>
<td>47</td>
</tr>
<tr>
<td>501-600</td>
<td>1</td>
<td>600</td>
<td>3,497</td>
<td>27</td>
</tr>
<tr>
<td>601-700</td>
<td>1</td>
<td>640</td>
<td>5,000</td>
<td>79</td>
</tr>
</tbody>
</table>
SUMMARY

The theme of this study is (a) that averages often cover up valuable information which is particularly important from the point of view of policy, and (b) that farm income statistics are sometimes lacking one or more important income components. Additionally, because of the increasing importance of nonfarm income for certain farm families, nonfarm income was considered in some detail along with its relationship to net farm income. The following attributes of farm income statistics were discussed in relation to the use to be made of them: suitability, completeness, accuracy, verification and relation. Such statistics can be used to measure two major aspects: one; welfare, and two; resource returns. The former usually implies the consideration of all income while resource returns are usually obtained from the net income of the farm business. The size of income will obviously vary depending on what operations are considered to be farms and what operations producing agricultural products are classified in some other way.

The census definition of a farm is based on acreage and value of agricultural products sold. If an agricultural production unit was less than 10 acres in area but sold more than $250 of agricultural products, it was called a farm. A valid criticism has been made that such a definition allows the classification of families as farm families where their places are more accurately described as rural residences rather than profit oriented businesses. Other means of defining a farm were considered on the basis of where the operator gets his greatest amount of income, on the basis of the characteristics of the production unit (e.g. cropland acres), and on the
basis of a definition based on the family farm. After definition comes classification. The major census classification is commercial and non-commercial farm. Another classification hinges around the family farm. From a somewhat different point of view, farms may be classified according to type of operation. Both definition and classification boundaries need not necessarily be rigid and fixed over time. It also seems possible that the increasing use of high-speed computers in the future will allow the use of more complicated boundaries. The fact of increasing capitalization in farming and a steady rise of prices, and therefore, land values over the last 50 years led several writers to study the feasibility of including some measure of income derived from capital gains with the conventional income in order to get a more accurate estimate of farmer's true income. The main problem here is that capital gains are not realized unless the farm is sold. Also if one were to attempt to add on a real capital gains adjustment to net farm income, one would have to cope with the fact that capital gains in the current period may be represented by income in the following periods due to a shift in expectation.

A good argument can be made for the consideration of more than conventional current income, especially when considering the different groups. Also, age and other socio-demographic information could be used profitably for welfare comparisons.

The USDA national average income of the farm population is obtained by treating United States agriculture as a single large firm and building up net income estimates by using available data on production, marketing, prices and cost. The state estimates were derived in like fashion. The major components of gross income are as follows: cash receipts from farm marketings,
government payments to farmers, home consumption of farm products, and
rental value of farm dwellings. Net income is obtained by subtracting
production expenses which include, in addition to current operating ex-
penses, depreciation of capital equipment, taxes on farm property, inter-
est on the farm mortgage debt, and net rent to nonfarm landlords. This
net income figure obtained applies to all units classified as farms by
the census. Total personal income of the farm family from all sources
includes net farm income of farm operators on the farms as one of its
component parts. Also included on the farm side are the farm wages of
laborers living on farms. Personal income from nonfarm sources includes
wages, salaries, and other labor income of farm residents.

USDA estimates of farm costs and returns give an economic profile of
different types of commercial farm. In calculating net farm income, the
value of those farm produced goods which are consumed by the farm house-
hold together with the nominal rental on the farm dwelling estimated at
eight percent of the value of the current dwelling are included. A char-
acteristic of this series is the use of a charge for capital concept which
allocated income between capital and labor and management. This series
does not include any estimate of nonfarm income. The third series to be
considered was that based on all those farmers in Iowa who kept official
farm records. Information was available by economic areas by specialized
types of farms and by profitability of farms. A management return was cal-
culated by assessing a charge in capital and for unpaid family labor. In
1959, this management return was negative in quite a few cases. Here again,
nonfarm income was not considered.
The Iowa extension service farm business summary of Iowa farms gave some indication of the income situation of those farmers who kept records. Only farm income was considered.

To get a better idea of the income situation it was proposed to study county data. One of the most important justifications for this was that income at the state level and on a type of farm basis or a regional basis obscured an evaluation of a relatively small group of farms.

The source of data was a sample of 202 families in Kossuth County, Iowa. Of these, 120 of them were classified as farm operator families, the rest as nonfarm families. The county is agriculturally orientated. The questionnaire used allowed income from different sources to be noted along with characteristics of business engaged in and certain socio-economic characteristics of the family members.

Estimates were made of income from different sources, the primary emphasis being to show the components of nonfarm income of farm families. Two regression analyses were run: the first considered the relationship between net farm income and nonfarm income, the second the relationship between acres operated and net farm income. Both correlation coefficients indicated the lack of any strong relationship between the two variables considered.

It was speculated that up to a certain level of family income, a farmer was likely to be very interested in finding off farm employment. If this was not available he would either have to expand operations or leave farming. Where off farm employment was available it was likely that an increasing number of farmers would farm part-time and work off the farm part-time.
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