RURAL INCOME DETERMINATION IN THE EAST NORTH CENTRAL STATES:

IMPLICATIONS ON POLICY AND POVERTY

DISSEMINATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

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* * * * * *

The Ohio State University
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TABLE OF CONTENTS

ACKNOWLEDGMENTS ............................................ ii
VITA ........................................ iv
LIST OF TABLES ........................................ viii
LIST OF FIGURES ...................................... ix
INTRODUCTION ........................................ 1

CHAPTER

I. THE PROBLEM ........................................ 2
  Poverty: What Is It?
  Incidence of Poverty in the USA
  The Causes of Poverty
    Macro causes
    Micro causes
    Hybrid causes
  The Situation in Rural America

II. THE PROBLEM—PHASE II ................................ 33

  Policy
  What Have Our Policies Been?
  How Have the Policies Fared?
  Additional Policy Problems
  What Policies Then?

III. THE STUDY ........................................ 46

  The Original Sample
  The Study Sample
  Basic Premises
  The Objectives
  The General Hypotheses
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Income Necessary to Achieve Various Levels of Living by Various Definitions</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Persons in Poverty Status in 1963 by Alternative Definitions</td>
<td>12</td>
</tr>
<tr>
<td>3.</td>
<td>Persons in Poverty, By Rural and Urban Residence, 1965</td>
<td>13</td>
</tr>
<tr>
<td>4.</td>
<td>Number of Poor Households and Incidence of Poverty, 1966</td>
<td>15</td>
</tr>
<tr>
<td>6.</td>
<td>Selected Housing Characteristics, by Residence, United States, 1960</td>
<td>30</td>
</tr>
<tr>
<td>7.</td>
<td>Ratio of Persons in Health Occupations and Other Data to Population by County Group, 1962</td>
<td>32</td>
</tr>
<tr>
<td>8.</td>
<td>General Profile of Terminal Groups for Selected Characteristics</td>
<td>82</td>
</tr>
<tr>
<td>9.</td>
<td>Chi-square Comparison of the Agricultural and Non-Agricultural Branches (Groups 2 and 3)</td>
<td>83</td>
</tr>
<tr>
<td>10.</td>
<td>Chi-square Comparison of Groups 4 and 5</td>
<td>85</td>
</tr>
<tr>
<td>11.</td>
<td>Chi-square Comparison of Groups 12 and 13</td>
<td>88</td>
</tr>
<tr>
<td>12.</td>
<td>Chi-square Comparison of Groups 32 and 33</td>
<td>89</td>
</tr>
<tr>
<td>13.</td>
<td>Chi-square Comparison of Groups 24 and 25</td>
<td>90</td>
</tr>
<tr>
<td>14.</td>
<td>Variables in the Regression Model</td>
<td>98</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Absolute and Relative Poverty</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>The Poverty Band, 1905-1960</td>
<td>7</td>
</tr>
<tr>
<td>3.</td>
<td>Lorenz Curves for the Distribution of Family Personal Income</td>
<td>18</td>
</tr>
<tr>
<td>4.</td>
<td>The Agricultural Branch of the Automatic Interaction Detection Tree</td>
<td>62</td>
</tr>
<tr>
<td>5.</td>
<td>The Non-Agricultural Branch of the Automatic Interaction Detection Tree</td>
<td>63</td>
</tr>
</tbody>
</table>
INTRODUCTION

The subject of poverty is many faceted and extremely complex. The word "poverty" means many different things to different people. However, poverty, by any definition, exists and is a problem that is plaguing us at the individual, national and even international levels. It is a much discussed and "cussed" problem because of its exasperating durability and magnitude. It may not be the simple definitive problem suited to dissertation level research and may be just as insolvable and unmanageable as a life's work. However, a piece of it, which this work represents, may afford a starting point.

Equally foreboding is the topic of policy. Making any attempt to analyze policies or suggest alternatives is like opening Pandora's Box. Everyone is an expert in the area of policy, unfortunately consensus disappears as soon as the constituency becomes larger than one. Again the importance of policy rather than ease or manageability dictate this effort to say something constructive and perhaps even new.

In the face of such formidable foes the author can only plead naivete', and the awareness that the problem of poverty plus the importance of policy, on its elimination, are topics worthy of the effort.
CHAPTER I
THE PROBLEM

...poverty does survive. There is no firm definition of this phenomenon and again save as a tactic for countering the intellectual obstructionist, no precise definition is needed.

John Kenneth Galbraith

Poverty: What Is It?

Poverty has probably existed as a state of being since man's appearance on earth. Plutach lamented the presence of poverty and the disparity of wealth in ancient Athens. Christ noted the fact of poor people and poverty in Jerusalem. The French Revolution was a violent statement of poverty and despair, while Karl Marx's, Das Kapital and his Communist Manifesto were prompted by the poverty and conditions of nineteenth century England. Today nearly every newspaper, news broadcast, and political speech has statements about poverty, and even worse, many people live it in the midst of plenty.

Poverty is a relative term in many regards, but the condition of "absolute-poverty" or the state of being below the basic biological necessities of life is probably the same today as any such state in the past. Absolute-poverty is defined as the lack of or inability to acquire basic goods such as food, clothing, and shelter. Absolute-poverty is not only short term starvation and death but also long term malnutrition and illness resulting in shortened life expectancies.
This level varies slightly due to environmental variances such as climate. The condition herein referred to as "relative-poverty" has little similarity to the past, nor is it consistent as an intersocietal reference. Relative-poverty is much harder to define as it only has meaning within a given socio-economic system. It can generally be defined as the lack of or inability to acquire the goods and services deemed necessary for a satisfactory life style in the given socio-economic system.

These two concepts might be thought of graphically as a black band forming the base or absolute poverty state with a gray area above it which gradually reaches a point that the larger system defines as white or the non-poverty level. However, even this sort of simplified portrayal is complicated by personal preferences and viewpoints.

This gray area of relative-poverty has been the battle ground of the poverty question. Little agreement has been noted among economists, sociologists, politicians or the poor themselves. The conclusions of these people are dependent upon their respective points of view, assumptions and interests. The over-riding theme has been to establish a dollar-level line of demarcation between poverty and affluence. Few if any of the workers in this area are guilty of saying it is this easy, but the complexity of the problem and the high negative correlation between money income and poverty contribute to the seemingly naive conclusions. It has been recognized that things like family size, locale of residence, age, personal tastes and preferences are important. Efforts to include these have been and are being made.
Variance in climate and socio-economic systems

Fig. 1.---Absolute and relative poverty.
This gray area represents an interaction region for "poverty" of a socio-psychological nature and poverty of an economic physiological nature. No absolute scales of measurement are available to determine the extent of socio-psychological poverty nor can dollars always be expected to eliminate it. The acceptance of a dollar proxy with variation of level due to circumstance is used not because of satisfaction with it, but rather the lack of a more practical and better alternative.

Mollie Orshansky made one of the best known attempts to define poverty levels, taking into account variables such as age, color, household status, and farm-nonfarm residence. She uses a two-point definition for poverty, "poverty levels" and "low income levels", which creates a poverty range that parallels the above mentioned relative poverty area. A major variation of the Orshansky poverty index is a 30 per cent difference between farm and nonfarm poverty levels, the farm index is the lower. For example, she establishes a nonfarm family of two "poverty level" at $2,100 and the "low income level at $2,810, while a similar farm family's levels are at $1,475 and $1,980.

---


2 Ibid., p. 42 (1965 terms).
For a farm family of four, she set the poverty level at $2,200 per year and the parallel nonfarm family at $3,100 per year. ³

That rural living is less costly and that there should be a farm-nonfarm differential is both well accepted and empirically based. However, the Commission on Rural Poverty concluded that this differential was closer to 15 per cent.⁴ There is a rising skepticism about this cost of living differential since many services are more costly or nonexistent in rural areas, there is a lack of effective competition in small market areas, and because of unaccounted costs of self provision.

Oscar Ornati has defined a "poverty band" for a family of five and has computed this poverty band for the United States from 1905 through 1960.⁵ He notes three critical levels in this poverty band; "Minimum Subsistence," "Minimum Adequacy" and "Minimum Comfort." The approximate dollar values for these three levels are respectively $2,500, $4,300, and $5,500 for 1960. The relationship over time can be seen in Figure 2.

---


Fig. 2.--The poverty band, 1905-1960 (constant 1960 dollars)

In view of Ornati's minimum comfort level of $5,500, it is probably no accident that a guaranteed income floor of $5,000, for a family of four, was demanded by various poverty representatives at the White House Conference on Food, Nutrition and Health. In effect, these representatives of poverty are saying, this is the acceptable relative poverty level to achieve the minimum standards of living in our society. It probably is not high enough, in their eyes, to be called non-poverty since it is referred to as the floor but it is well above the subsistence level.

The Labor Department has conducted studies to determine a modest-but-adequate income for a family of four and arrived at a figure of $9,200 in 1968. This relatively high figure reflects the orientation of the Labor Department and is directed, primarily, towards the urban worker, but it does throw a shadow of doubt on the adequacy of some of the other levels of poverty cited.

A group of workers in the fields of welfare and poverty have suggested defining the lowest 25 per cent of our families on an income basis as being in poverty. This has appeal from a simplistic point

---

6 The White House Conference on Food, Nutrition and Health as Reported in Time, December 12, 1969, p. 16.


8 Howard Phillips, Interview at The Ohio State University, Columbus, Ohio, January 16, 1970.

D. Lee Bewden, Seminar on Guaranteed Income at The Ohio State University, Columbus, Ohio, January 17, 1969.
of view, but it would appear to be very static and rigid in relation to time and income structure change.

An extension of the simple lowest 25 per cent concept of poverty would define the lowest quartile income level as a necessary income and the median family income of the U.S. as a sufficient income. This is again arbitrary, but the lowest quartile (25.1 per cent) family income was defined by $5,000 and the median family income was $8,017 in 1967.9 These figures parallel some of the above amounts, while it is, in effect, a hybrid method. However, the median level not only approaches the Labor Department's modest-but-adequate level, it also has the democratic appeal of absolute middle class.

These few examples of methods of determining poverty, summarized in Table 1, are sufficient to illustrate the elusiveness and complexity of the term poverty. It is not the inability to live within one's means nor dissatisfaction with one's life style since such situations and the inverse run the entire spectra of income levels. No exact dollar amount will either remove or place a family in poverty. Madden notes that the deeper aspects of poverty go beyond the purse.10 Stinson notes that income needs vary with the quality of services afforded by the community.11 For example, good schools may decrease income


10J. Patrick Madden, op. cit., p. 1401.

# TABLE 1

INCOME NECESSARY TO ACHIEVE VARIOUS LEVELS OF LIVING BY VARIOUS DEFINITIONS

<table>
<thead>
<tr>
<th>Year</th>
<th>Subsistence</th>
<th>Necessary</th>
<th>Sufficient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1965</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orshansky (family of four)</td>
<td>$2,200 (Poverty Level)</td>
<td>$2,948 (Low Income)</td>
<td></td>
</tr>
<tr>
<td>Farm</td>
<td>$3,100 (Poverty Level)</td>
<td></td>
<td>$4,154 (Low Income)</td>
</tr>
<tr>
<td>Nonfarm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1967</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>President's Advisory Commission</td>
<td>$2,550</td>
<td></td>
<td>$5,500</td>
</tr>
<tr>
<td>Farm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>$3,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural nonfarm</td>
<td>$3,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1960</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ornati</td>
<td>$2,500 (Minimum Subsistence)</td>
<td>$4,300 (Minimum Adequacy)</td>
<td>$5,500 (Minimum Comfort)</td>
</tr>
<tr>
<td><strong>1970</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White House Conference</td>
<td></td>
<td>$5,000</td>
<td></td>
</tr>
<tr>
<td><strong>1967</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor Department</td>
<td></td>
<td>$9,200</td>
<td></td>
</tr>
<tr>
<td><strong>1967</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest Quartile and Median</td>
<td>$5,000 (25.1%)</td>
<td>$8,017 (50%)</td>
<td></td>
</tr>
<tr>
<td>Stinson</td>
<td>&quot;Poverty-Level&quot; + 1 Standard Deviation</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1967</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal Product Distribution</td>
<td></td>
<td></td>
<td>$12,632</td>
</tr>
<tr>
<td>Family of 4—1967</td>
<td>$3,158</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| }
needs. He also notes there is commonly an omission of the need for a life-long surplus, beyond minimum needs, to stockpile for old age or retirement. This he solves by taking the minimum level, whatever it might be, and adds one standard deviation.  

Regardless of how poverty is defined for analytical purposes the fact of poverty exists, only the defined magnitude changes. Many of these questions have social or ethical overtones and in the final analysis there is a great deal subjectivity in the researcher's "objective" statements.

**Incidence of Poverty in the USA**

The incidence, as well as the magnitude of poverty, are dependent upon the definition of poverty to a certain degree. Table 2 contains four alternative definitions and a breakdown of certain characteristics.

The absolute numbers are fairly close for these four alternatives. However, the incidence varies to a larger extent. For example, Column D, which is a breakdown of the Social Security Administration's (Orskansky) definition, has the largest absolute number of poverty persons, but the fewest living on farms.

The use of the various other definitions outlined above would change these levels, but for reasons of expediency and because of the more common usage, the considerations below will use the $3,000 family and $1,500 individual poverty status definition. In Table 2 below

---

12 I_{bid}, p. 1419.
TABLE 2

PERSONS IN POVERTY STATUS IN 1963 BY ALTERNATIVE DEFINITIONS

<table>
<thead>
<tr>
<th>Type of Unit</th>
<th>A^a</th>
<th>B^b</th>
<th>C^c</th>
<th>D^d</th>
<th>Total U.S. Population (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of persons</td>
<td>33.4</td>
<td>34.0</td>
<td>34.5</td>
<td>34.6</td>
<td>187.2</td>
</tr>
<tr>
<td>Farm</td>
<td>4.9</td>
<td>6.4</td>
<td>5.1</td>
<td>3.2</td>
<td>12.6</td>
</tr>
<tr>
<td>Nonfarm</td>
<td>28.5</td>
<td>27.6</td>
<td>29.3</td>
<td>31.4</td>
<td>174.6</td>
</tr>
<tr>
<td>Unrelated individuals</td>
<td>4.9</td>
<td>4.0</td>
<td>4.9</td>
<td>4.9</td>
<td>11.2</td>
</tr>
<tr>
<td>Farm</td>
<td>2.2</td>
<td>1.4</td>
<td>2.1</td>
<td>1.1</td>
<td>0.4</td>
</tr>
<tr>
<td>Nonfarm</td>
<td>4.7</td>
<td>2.6</td>
<td>4.7</td>
<td>4.8</td>
<td>10.8</td>
</tr>
<tr>
<td>Members of family units</td>
<td>28.5</td>
<td>30.0</td>
<td>29.6</td>
<td>29.7</td>
<td>176.0</td>
</tr>
<tr>
<td>Farm</td>
<td>4.7</td>
<td>5.0</td>
<td>4.9</td>
<td>3.1</td>
<td>12.2</td>
</tr>
<tr>
<td>Nonfarm</td>
<td>23.8</td>
<td>25.0</td>
<td>24.6</td>
<td>26.6</td>
<td>163.8</td>
</tr>
<tr>
<td>Children under age 18</td>
<td>10.8</td>
<td>15.7</td>
<td>14.1</td>
<td>15.0</td>
<td>68.8</td>
</tr>
<tr>
<td>Farm</td>
<td>1.3</td>
<td>2.4</td>
<td>2.1</td>
<td>1.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Nonfarm</td>
<td>9.0</td>
<td>13.3</td>
<td>12.0</td>
<td>13.5</td>
<td>64.0</td>
</tr>
</tbody>
</table>

^a Under $3,000 for family; under $1,500 for unrelated individuals (interim measure used by Council of Economic Advisers).

^b Level below which no income tax is required, beginning in 1965.

^c $1,500 for first person plus $500 for each additional person, up to $4,500.

^d Economy level of the poverty index developed by the Social Security Administration, by family size and farm-nonfarm residence centering around $3,100 for four persons.

poverty is classified on a farm and nonfarm residency criterion. The President's Commission on Rural Poverty in 1967 classified poverty on a rural-urban basis. They reported 13.8 million rural persons in poverty (Table 3).

TABLE 3
PERSONS IN POVERTY, BY RURAL AND URBAN RESIDENCE, 1965

<table>
<thead>
<tr>
<th>Item</th>
<th>Persons at All Income Levels</th>
<th>Poor Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number (millions)</td>
<td>Per cent Distribution</td>
</tr>
<tr>
<td>United States</td>
<td>189.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total rural</td>
<td>55.3</td>
<td>29.1</td>
</tr>
<tr>
<td>Farm</td>
<td>13.3</td>
<td>7.0</td>
</tr>
<tr>
<td>Nonfarm</td>
<td>42.0</td>
<td>22.1</td>
</tr>
<tr>
<td>Total urban</td>
<td>134.6</td>
<td>70.9</td>
</tr>
<tr>
<td>Small cities</td>
<td>27.1</td>
<td>14.3</td>
</tr>
<tr>
<td>Metropolitan areas</td>
<td>107.5</td>
<td>56.6</td>
</tr>
<tr>
<td>Central cities</td>
<td>58.6</td>
<td>30.8</td>
</tr>
<tr>
<td>Suburbs</td>
<td>48.9</td>
<td>25.8</td>
</tr>
</tbody>
</table>


This definition of rural includes all persons living on farms or in communities of less than 2,500 persons. On this basis, 25 per cent of the rural people are below the poverty line and 40 per cent of the poverty status people in the U.S. live in rural areas.
The Secretary of Agriculture, Clifford Hardin, in a recent speech at The Ohio State University, defined rural-America as all of the U.S. excluding the 212 metropolitan areas. With this definition, 59.9 per cent of the poverty in the U.S. is in the rural areas, when the figures in Table 3 are used.

The point is, poverty can be found in nearly every county of the United States. It is not the exclusive problem of big metropolitan areas either in absolute or relative terms. The reason poverty has been so notable in large cities is the extreme concentration in ghettos and slums and the resulting social unrest that has brought notoriety and awareness.

Relatively, the incidence of poverty in the U.S., is greater among the elderly (over 65), families headed by women, and in non-white families (Table 4).

The questions of incidence and the characteristics of persons in poverty are vital to this study. However, the author believes that certain aspects, especially the rural-urban dichotomy, are generally over-played. While this is a study of rural poverty, the causes of both rural and urban poverty are similar and spatial difference does not make them exclusive or even competitive. If they are objectively analyzed, urban poverty is often a second generation transplant of rural poverty, and many macro causation factors are the same for both.

---

Clifford Hardin, *The Necessities of Life, A Speech Delivered at The Ohio State University, February 12, 1970.*
TABLE 4

NUMBER OF POOR HOUSEHOLDS AND INCIDENCE OF POVERTY, 1966

<table>
<thead>
<tr>
<th>Characteristics of Head of Household</th>
<th>Number of Poor Households&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Incidence of Poverty&lt;sup&gt;b&lt;/sup&gt;</th>
<th>1966</th>
<th>1966</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(millions)</td>
<td>(per cent)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonfarm</td>
<td>10.3</td>
<td>17.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>7.9</td>
<td>15.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male head</td>
<td>3.9</td>
<td>9.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 65 years</td>
<td>2.4</td>
<td>6.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aged (65 years and over)</td>
<td>1.5</td>
<td>24.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female head</td>
<td>4.0</td>
<td>37.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 65 years</td>
<td>2.0</td>
<td>30.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aged (65 years and over)</td>
<td>2.0</td>
<td>48.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonwhite</td>
<td>2.4</td>
<td>37.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male head</td>
<td>1.2</td>
<td>26.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 65 years</td>
<td>.9</td>
<td>23.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aged (65 years and over)</td>
<td>.3</td>
<td>51.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female head</td>
<td>1.2</td>
<td>60.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 65 years</td>
<td>.9</td>
<td>58.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aged (65 years and over)</td>
<td>.2</td>
<td>69.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm</td>
<td>.6</td>
<td>20.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>.5</td>
<td>16.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonwhite</td>
<td>.2</td>
<td>69.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Households are defined here as the total of families and unrelated individuals.

<sup>b</sup>Poor households as a per cent of the total number of households in the category.

Note: Poverty is defined by the Social Security Administration poverty income standard; it takes into account family size, composition and place of residence.

The Causes of Poverty

There have probably been as many causes of poverty listed as there have been people describing them. However, most of the more rational and objective arguments fall into three cases. The first being the macro environment, which includes physical, political, social and economic aspects. The second being the micro or individual condition as to abilities, attitudes and handicaps. And the third is the interaction group of the micro and macro factors.

Two major situations on the macro scale will cause poverty. The first is the case where a region or a nation has an inadequate economic product to lift the per capita product above poverty. This situation can be seen in many countries of the world, and is usually due to shortcomings in all of the four basic macro segments; physical, political, social and economic, though one may be predominate in effect.

The second is the case where the economic product is sufficient to raise the per capita product above the poverty level, but due to inequity of distribution some people are far above poverty and many people are below the poverty line. This too is caused by shortcomings in one or more of the macro segments. It is a common phenomena in all countries and often most evident in those which lack sufficient product due to the stark contrast. However, it is more distressing where ample product is available to eliminate poverty.

The United States is obviously not of the former type, though some regions may approach this situation. Therefore, the U.S. suffers
from the second situation, or the inequity of income distribution.

In 1967 the per capita gross product was valued at $3,966 and the per capita personal income was $3,158.\textsuperscript{14} If this personal income were distributed equally every family of four would have an income of $12,632 which is obviously not the case.

In Figure 3 the income distribution of the United States is presented for selected years. The distribution has been improving on the equality scale over time. However, the greatest change has been in the upper-middle income ranges, while the lowest 20 per cent has maintained a relatively constant share.

Macro causes

The causes of inequality at the macro level have already been generally classified into the four basic segments of national life; physical, political, social and economic. There is another general classification called situational. To illustrate these classes, a few examples of each are listed below.

Physical:

1. Limited resources as evidenced in some parts of Appalachia and in the Southwest;
2. Isolation such as Upper Michigan and Minnesota;
3. Adverse climate as in Maine;
4. Adverse topography as in the Western Mountain States.

\textsuperscript{14} U.S. Department of Commerce, \textit{op. cit.}, p. 193.
Fig. 3.—Lorenz curves for the distribution of family personal income.

Political:
1. Many policies to encourage growth and permit capital accumulation in various industries (i.e., tax advantages, tariffs, depletion allowances);
2. Government contracts and investment choices of social overhead capital.

Social:
1. Discrimination of opportunity due to race, residence and sex;
2. Overriding faith in free market solutions and in the Protestant ethic;
3. Possible solidification of action and reaction with increasing maturity as a society.

Economic:
1. Immobility of resources and lumpiness of capital;
2. Imperfections of the market system especially of information and unions;
3. Tradition or resistance to change.

Situational:
1. Wars;
2. Depressions or recessions;
3. Inflation;
4. Technology;
5. Disasters.
Many of these are things that have mixed blessings, especially those in the situational group. There are usually winners and losers at the micro level with technological change and the macro situation usually improves. While in the cases of war, depression, and inflation again winners and losers are found at the micro level, however, the macro situation seldom improves. Some of these are beyond the control of men, but others could be modified in their occurrences and effects.

Many of the examples noted under the physical group are beyond our control, though some, such as isolation, might be changed.

Social causes of poverty probably can be changed, but society changes its values slowly or more importantly the manifestations of its values. The ideals and basic values are no doubt the right ones, but they are not always in evidence.

The economic system without men is neutral, but being a large human institution it is not perfect. Moreover, the molding of the economic system by political and social determinants greatly compound the inherent shortcomings.

The political group of poverty determinants is the most prominent and the most frustrating. Its prominence results from the implementation of many of the social, economic, situational and even physical causes via policy. The most frustrating group because they could be changed with a pen, if commitment, consensus, and knowledge were achieved. This last phase is the key since commitment is common, but consensus and knowledge are elusive if not impossible. Since policy
is a major portion of this study it will be considered in greater
detail later.

Micro causes

The micro causes or individual reasons for poverty are commonly
dismissed by most non-poverty people as being unimportant because ev­
everyone is equal and all they need do to succeed is work. Therefore,
poverty is due to laziness and this is neither to be rewarded or suf­
fered by the "hard-working" non-poverty group.

The micro causes are real and not as easily dismissed as the
above statement would indicate. They fall into four general classes;
physical, intellectual, psychological and circumstantial. Each of
these are examined briefly below.

Physical: Any physical handicap that impairs or limits the
capability of a person to earn an income such as poor eye sight, loss
of or limited use of an arm or leg, allergies, or a hearing problem.

Intellectual: Absolute potential in the case of the retarded or
persons of a low intellectual capability or the failure to receive the
training even if there is a potential to earn a sufficient income.

Psychological: While this is primarily the result of environ­
ment, the impact often creates a low achievement, fatalistic attitude.
A feeling of inadequacy can be as important as the lack of an arm or
other physical problem. Mental illness of any type or origin can be
extremely limiting.
Circumstantial: This is a hybrid cause to a large extent, but the prerequisite factor is individualistic. Some examples are race, religion, creed, age and sex. In spite of legislation, ideals and enlightenment, real differences of income remain due to prejudice.

The question of physical handicap is seldom debated or belabored since it is just cause for not working and society is willing to help such people without much question. There are very pertinent questions about how and to what extent they should be helped, but not if they should be helped. Likewise, society recognizes the human problem of prejudice and is taking many significant strides to reduce it. However, there is little agreement in how to handle the questions of failure to develop intellectual potential and psychological reasons for non-achievement, or even if these are legitimate concerns for society as a whole.

Scores of researchers have pointed out the correlation of low quality education systems and poverty. For example, Bryant reported the level of educational attainment, percentage of youth going on to college, and percentage of certified teachers are lower in rural areas than in urban areas.\(^\text{15}\) Levine shows a similar relationship for the urban ghetto in comparison with non-ghetto urban areas and suburban areas.\(^\text{16}\) Castle and Butcher found per student expenditures at the

\(^\text{15}\) W. Keith Bryant, \textit{op. cit.}, p. 231.

classroom level were lower in rural areas than in urban areas. However, the Coleman Report found variance within schools was four times greater than variance between schools upon the question of quality of the school and student achievement. This report established family background as the prime determinate of student achievement.

This family background factor has been noted by various workers in determining achievement. McClellend in developing an achievement scale found competiveness, desire for achievement and interest in perfection or high achievement types were most often stimulated by family background. Persons with these characteristics usually performed tasks better than persons without them, but with equal capabilities. He also noted a willingness to take risks and to resist social pressure in the high achievement group.

Straus found that students in Michigan, Iowa, Wisconsin, and Washington, who planned on remaining in rural areas or who planned to


20 Ibid., p. 3.
become farmers, lacked these characteristics and usually were discouraged covertly by their families from higher achievement.  

This psychological factor that is resultant of family and environment is also noted by Oscar Lewis in what he calls the "Culture of Poverty." His conclusion is that poverty is self perpetuating in effect because the values, aspirations and life styles of poverty people are well ingrained before contact with the larger society is achieved. When contact is made either the poverty raised person is alienated and unresponsive or the institutions of the larger society are not capable of handling him.

This last point is the theme of Schrag's article, "Growing Up On Mechanic Street." Schrag, similar to many workers in the field, sees education as the key at the micro level, but also feels that only a radically new approach will achieve the desired effect.

In most cases a single micro cause will not determine failure socially or economically, but the cumulative effect when in combination with macro factors or other micro causes can be disastrous.

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Hybrid causes

This class of poverty causes are the interaction of micro and macro causes or those which cannot be easily classified because it is a secondary cause related to some other poverty cause. The outstanding example would seem to be capital assets controlled by an individual. The factor of capital assets is an important variable of income determination for farmers. However, the acquisition and accumulation of capital assets is dependent upon all the above noted variables, which can be causes of poverty. On the whole, these will be dismissed from the discussion, although they may enter as proxies or indicators of other variables.

The Situation in Rural America

The transition of the rural community and agriculture started with the Industrial Revolution. Agricultural methods and capabilities had changed very little from prehistoric time to the dawn of the Industrial Revolution. The new technology that appeared with the Industrial Revolution offered new methods and capabilities to farmers, and improved transportation. The new industrial market had an increased demand for agricultural products and also offered increasing numbers of input factors for agriculture. This symbiotic relationship saw absolute growth in both the agriculture and the non-agricultural
sectors in economic product and numbers of persons employed until 1910. After 1910 agriculture began losing labor absolutely, however, the economic product of agriculture continued to rise except for brief interludes of extreme depression. The relative position of agriculture has steadily declined along with many primary product industries, which are found in rural areas. Many rural communities are primarily service centers for agricultural and primary industry workers. With the decline in numbers of persons employed in these sectors the market structure of many communities has crumbled.

At the same time urbanization and centralization increasingly dominated the scene. Problems of transportation, storage and communications were still important enough to demand large labor concentrations, proximity of complimentary industries and of institutions that depended upon daily communications for operation. This resulted in very heavily industrialized areas with many of the service institutions being equally concentrated nearby.

Urbanization has increasingly isolated some rural areas from economic alternatives and the mainstream of national life. Rural areas continued to supply labor, food and other raw materials but the cultural and spiritual center had shifted. Rural community decay has been accelerated by the failure to invest sufficient social overhead

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capital to maintain community viability. Heady noted an average rural to urban migration of 1,000,000 persons per year since 1940, which resulted in a net capital transfer of 20 billion dollars a year from rural to urban areas.\(^\text{25}\) His conclusion was that the better and more aggressive people left the rural areas for lack of viable alternatives. This agrees with Castle's and Butcher's work cited above.

Rapid increases of productivity in the agricultural sector achieved through technology in the face of an inelastic demand for agricultural products naturally forces prices to fall. This with the atomistic market structure of producers in agriculture creates the dilemma of price takers in a competitive market where the individual maximizes by producing as much as possible, but this creates surpluses and lower prices for the industry.

Mobility of all types of factors out of agriculture would be expected and it has been the case. The decline in agricultural population has been noted above. The number of farms declined from a peak of 6,453,991 in 1950 to 3,157,857 in 1964.\(^\text{26}\) There has also been a steady decline in acreage under cultivation, but there are still too many farms and farmers. In 1965, 1,970,000 farms with average sales of $10,000 could have supplied the entire agricultural product. Even


fewer are needed when the actual size and necessary scale of operations are considered for commercially viable farms. Large numbers of persons in the rural communities are linked to these farmers, as well as unemployed or underemployed people to whom the communities offer no economic alternatives. The Advisory Commission on Intergovernmental relations found employment opportunities in rural areas were declining and the opportunities of attracting new industry were not very bright.27

The school systems in rural areas are becoming ever less competitive for staff, and less capable of equipping people for the needs of our society and economy. Some of the dollar comparisons are seen in Table 5 for rural-urban schools. While not perfect they are fairly good indicators of school competitiveness for staff and competency in delivering quality education.

The condition of housing and its indication of quality of life for the rural areas is presented in Table 6 and compared to urban housing. Rural living can be assumed to be poorer than urban living if condition of housing is a fair proxy of life quality.

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TABLE 5
SELECTED CHARACTERISTICS OF RURAL AND URBAN SCHOOL SYSTEMS IN THE UNITED STATES, 1955-1956

<table>
<thead>
<tr>
<th>Subject</th>
<th>Rural Systems</th>
<th>Independent City School Systems by Size of City</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2,500-9,999</td>
</tr>
<tr>
<td>Average enrollment:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per elementary school</td>
<td>107</td>
<td>324</td>
</tr>
<tr>
<td>Per secondary school</td>
<td>177</td>
<td>436</td>
</tr>
<tr>
<td>Average number of teachers:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per elementary school</td>
<td>3.7</td>
<td>11</td>
</tr>
<tr>
<td>Per secondary school</td>
<td>8.7</td>
<td>20</td>
</tr>
<tr>
<td>Average salary of instructional staff</td>
<td>$3,123</td>
<td>$4,034</td>
</tr>
<tr>
<td>Average current expenses per pupil</td>
<td>$221</td>
<td>$273</td>
</tr>
<tr>
<td>Average expense for instruction per pupil</td>
<td>$152</td>
<td>$195</td>
</tr>
<tr>
<td>Expenditures for transportation per pupil</td>
<td>$211</td>
<td>$180</td>
</tr>
<tr>
<td>Per cent of systems with kindergarten</td>
<td>27</td>
<td>58</td>
</tr>
</tbody>
</table>

TABLE 6

SELECTED HOUSING CHARACTERISTICS, BY RESIDENCE, UNITED STATES, 1960

<table>
<thead>
<tr>
<th>Item</th>
<th>Total</th>
<th>Urban</th>
<th>Rural Total</th>
<th>Nonfarm</th>
<th>Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupied housing units (thousands)</td>
<td>53,024</td>
<td>38,320</td>
<td>14,704</td>
<td>11,137</td>
<td>3,566</td>
</tr>
<tr>
<td>(per cent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition, occupied units:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound</td>
<td>81.2</td>
<td>85.4</td>
<td>71.5</td>
<td>69.7</td>
<td></td>
</tr>
<tr>
<td>Deteriorating</td>
<td>13.8</td>
<td>11.2</td>
<td>8.5</td>
<td>22.9</td>
<td></td>
</tr>
<tr>
<td>Dilapidated</td>
<td>5.0</td>
<td>3.4</td>
<td>8.5</td>
<td>7.3</td>
<td></td>
</tr>
<tr>
<td>Sound with complete plumbing</td>
<td>74.0</td>
<td>81.4</td>
<td>56.7</td>
<td>50.9</td>
<td></td>
</tr>
<tr>
<td>Tenure:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onwer-occupied</td>
<td>61.9</td>
<td>58.3</td>
<td>40.5</td>
<td>29.7</td>
<td>26.2</td>
</tr>
<tr>
<td>Renter-occupied</td>
<td>38.1</td>
<td>31.7</td>
<td>59.5</td>
<td>70.3</td>
<td>73.8</td>
</tr>
<tr>
<td>Sound condition with complete plumbing:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner-occupied</td>
<td>65.0</td>
<td>90.3</td>
<td>67.0</td>
<td>57.2</td>
<td></td>
</tr>
<tr>
<td>Renter-occupied</td>
<td>65.5</td>
<td>71.6</td>
<td>42.6</td>
<td>33.0</td>
<td></td>
</tr>
<tr>
<td>Water supply inside unit:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both hot and cold</td>
<td>87.2</td>
<td>95.0</td>
<td>69.3</td>
<td>65.3</td>
<td></td>
</tr>
<tr>
<td>Only cold</td>
<td>5.7</td>
<td>4.0</td>
<td>9.7</td>
<td>9.5</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>7.1</td>
<td>1.0</td>
<td>21.0</td>
<td>9.5</td>
<td></td>
</tr>
<tr>
<td>Bathroom facilities:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flush toilet</td>
<td>89.7</td>
<td>98.1</td>
<td>70.3</td>
<td>72.7</td>
<td>62.4</td>
</tr>
<tr>
<td>Bathtub or shower</td>
<td>88.1</td>
<td>96.3</td>
<td>69.1</td>
<td>71.1</td>
<td>62.9</td>
</tr>
<tr>
<td>More than 1 person per room</td>
<td>11.5</td>
<td>10.2</td>
<td>15.1</td>
<td>15.4</td>
<td>14.4</td>
</tr>
</tbody>
</table>

*Date apply to all housing units.*

Another indication of rural life quality is the ratio of persons in health occupations to population. In spite of greater incidence of disease in the rural areas, there are fewer facilities and trained personnel (Table 7).

Rural America has "push" factors or negative factors encouraging out migration operating in nearly every conceivable area of life. Likewise, urban America is offering many "pull" factors or positive factors attracting labor and resources. These have worked to a large degree since a very large rural to urban migration has occurred. But, this has been less than totally successful for those left behind and many of those who went, but were unable to adapt or to be assimilated.

Rural to urban migration has caused some very real resource allocation problems and has created definite dilemmas. Urban areas are starved for open space while rural areas have almost too much open space and not enough business. Urban areas are having difficulty supplying services because of too many people while rural areas have the same problem, but because of insufficient people. The emotional competition of rural proponents and urban proponents prevents rational realization that the two have the necessary components for total development and satisfaction. The two entities are definitionally different, but so are heads and hearts. The objective is not to pit them against each other, but to integrate and maximize their complementarities.
<table>
<thead>
<tr>
<th>Item</th>
<th>Greater Metropolitan</th>
<th>Lesser Metropolitan</th>
<th>Adjacent to Metropolitan</th>
<th>Isolated Semi-Rural</th>
<th>Isolated Rural</th>
<th>United States Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health personnel per 100,000 population:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dentist</td>
<td>71.0</td>
<td>52.0</td>
<td>38.7</td>
<td>40.6</td>
<td>27.4</td>
<td>54.1</td>
</tr>
<tr>
<td>Nurse, total</td>
<td>492.7</td>
<td>509.3</td>
<td>388.3</td>
<td>350.6</td>
<td>195.7</td>
<td>449.8</td>
</tr>
<tr>
<td>Active nurses</td>
<td>327.5</td>
<td>339.6</td>
<td>254.2</td>
<td>242.8</td>
<td>125.9</td>
<td>300.0</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>81.2</td>
<td>65.2</td>
<td>51.3</td>
<td>56.0</td>
<td>45.3</td>
<td>66.7</td>
</tr>
<tr>
<td>Physician, total</td>
<td>205.3</td>
<td>153.0</td>
<td>95.1</td>
<td>100.4</td>
<td>59.1</td>
<td>150.8</td>
</tr>
<tr>
<td>M.D.</td>
<td>195.4</td>
<td>145.3</td>
<td>85.6</td>
<td>94.2</td>
<td>53.0</td>
<td>142.9</td>
</tr>
<tr>
<td>D.O.</td>
<td>9.9</td>
<td>7.7</td>
<td>5.9</td>
<td>6.2</td>
<td>6.1</td>
<td>7.9</td>
</tr>
<tr>
<td>General hospital beds per 1,000 population</td>
<td>4.0</td>
<td>3.9</td>
<td>3.2</td>
<td>4.1</td>
<td>2.0</td>
<td>3.8</td>
</tr>
<tr>
<td>Effective buying income per capita</td>
<td>$2,526</td>
<td>$2,070</td>
<td>$1,554</td>
<td>$1,551</td>
<td>$1,207</td>
<td>$2,059</td>
</tr>
</tbody>
</table>

*Counts within standard metropolitan statistical areas (SMSA), as defined by the Bureau of the Budget, are here classified as greater metropolitan (if they are part of a SMSA of one million or more population) or lesser metropolitan (SMSA population of 50,000 to one million). Adjacent counties are counties that are not themselves metropolitan, but are contiguous to metropolitan counties. All other counties are classified as isolated; semi-rural counties contain an incorporated place of 2,500 or more population and rural counties do not.

CHAPTER II

THE PROBLEM--PHASE II

The necessity for choice for a reexamination of the premises of existing programs, for a weighing of alternatives is always an imperative....But we live in a time when this imperative has taken on a special urgency.

Kermit Gordon

Policy

Policy is a political direction or statement that reflects social ideals and economic necessities. It is the overt political force which in turn determines the action programs. Policy in a democratic society is usually a quilted compromise since the social ideals and economic necessities are seldom seen in exactly the same light by all the people in our socio-economic system. There is the second compromising fact that political power is not equally distributed nor is it always used for the maximum good of the total population.

This is not meant to condemn our system or policy, but rather is based empirically upon human nature and human institutions. All things must evolve to survive and our system and our policies have evolved over time. They may seem to be unresponsive and behind the times, but probably so are the majority of the people and institutions of our society. This slowness has the advantage of preventing large
errors that often occur with haste even though it may not solve some of our problems very expediently, especially those of people with limited political power.

Butcher and Castle cite evidence that the political sector has corrected more inequality than it has created and that there is a trend of improvement. However, in the same article, they stated some policies and programs, especially those dealing with agriculture, have impeded solutions and aggravated the basic problems to the injury of nation.

Policy is a human effort which reflects the ideals and good intentions of human beings, but the frailities of men especially in the realm of knowledge can make good intentions almost sinister in effect.

What Have Our Policies Been?

Maddox says that equality has been our basic keystone, but this has been subject to various definitions. He notes four major periods of reform in the United States: the Civil War period, the Wilson period, the Roosevelt or New Deal period, and the Kennedy/Johnson period.

28Butcher and Castle, op. cit., p. 133.

29Ibid., p. 134.


31Ibid., p. 1352.
The Civil War period struck three major blows: it ended slavery, changed the southern land tenure profile, and developed the Land Grant College System. In the Wilson period, rural schools received attention and vocational agriculture resulted from the Smith Hughes Act, the Smith Lever Act created the Federal Extension Service, and the Federal Income Tax was enacted. The New Deal period saw the most sweeping effort, stimulated by the national depression. During this period, steps were taken to achieve institution reform at all levels and in all sectors. Specifics of the New Deal period include the Farm Security Administration, the Agricultural Adjustment Administration, the Resettlement Administration, new planned communities, rural electrification, and rural rehabilitation programs. The last period, which is contemporary, includes a vast variety of programs directed at poverty in general, related social problems, and rural communities.\(^{32}\)

Maddox concludes that the prime interest in the past for agricultural policy has been increased productivity and that most past programs worked to the disadvantage of the small, low income farmer.\(^{33}\)

Myrdal observes that the American people are the most charitable people on earth, but the U.S. failed to establish a national welfare policy until 1930.\(^{34}\)

\(^{32}\)The reader is referred to the Catalog of Federal Programs for Individuals and Community Development. Compiled by OEO, 1965.

\(^{33}\)James G. Maddox, op. cit., p. 1360.

Bonner notes that rural welfare legislation has been justified on the two counts of low incomes for farmers and rural virtue, but the poverty group and the virtuous group are two different groups.\textsuperscript{35}

The three above statements indicate a great deal about the underlying philosophy and direction of our policies and programs for agriculture, rural areas, and the poor. American citizens like to think of the United States as the land of opportunity. Upon the base of the Statue of Liberty are the words:

\begin{quote}
\ldots Keep, ancient lands, your storied pomp.
\ldots Give me your tired, your poor, your huddled masses yearning to breathe free.
\end{quote}

\begin{quote}
I lift my lamp beside the golden door!\textsuperscript{36}
\end{quote}

All of these points suggest freedom as individuals, individual opportunity and a minimum of governmental interference. The question then is how in the face of poverty can these be proclaimed?

The United States was populated and developed by failures. Nearly everyone who came to these shores was in some way a misfit, an undesirable, or simply a failure. The lack of early structure, vast areas of virgin land, and harsh common foes permitted extensive experimenting, multiple chances (move on to the frontier), and necessity


\textsuperscript{36}Emma Lazarus, \textit{The New Colossus}. A sonnet affixed to the Statue of Liberty in 1903.
of neighbors to assist one another. Seldom would these people look beyond their community for help. They asked a chance, but made the breaks and rules as they went.

It is possible that much of this rugged individualism is myth, but there is nothing more prevasive than attractive myths. So welfare of individuals remained in the hands of individuals until 1930. Likewise, the policies and programs then fostered had to parallel the opportunity belief. As a result, most programs attempted to equip people with more "tools" not to tell them where or how to live. With new tools, or in other words, new opportunity, virtue would reign supreme. Who could question the ideal?

How Have the Policies Fared?

In 1934, Dwight Sanderson stated prophetically that depression accentuated the basic problems of agriculture and the mere return to good times would not remove them. The arrival of World War II brought "good times" and ended consideration of rural welfare. But the generally good times that have prevailed since World War II have proven that the basic problems remain. (Low agricultural incomes, rural community deterioration, periodic agricultural surpluses, excess agricultural labor, imperfect mobility, and lack of economic opportunities.)

Fuller breaks the programs directed at rural welfare into two groups, the human centered programs and the commodity-land

programs. Fuller concludes that the former have generally failed while the latter group have in general enjoyed success.

This conclusion must be examined closely since both types are successful as well as unsuccessful, but often these successes or failures are not of the expected nature.

The general attempt to improve rural incomes and to achieve more equitable income distribution has failed, but the human programs to improve education have permitted migration which in turn hurts rural communities. However, vocational agriculture encourages youth to remain in agriculture where there are only limited opportunities. The research to improve agricultural technology has improved production efficiency, but it has offset attempts to control supply. It has also afforded consumers more quantity and quality of agricultural products at lower prices, but it has lowered the real incomes of most producers and the price per unit produced in every case.

The preceding section indicates to a large extent just how poorly the policies have fared in solving individual and community problems in rural America. But this cannot be blamed on the lack of purely rural or agricultural policies and programs; it is the result of our societal values and a competitive view of proponents of rural and urban life.

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39 Ibid., p. 1246.
Additional Policy Problems

Hardin notes that political power and influence is rapidly moving from rural areas to urban areas. This will increase the isolation of rural America and decrease its ability to inform the country of its dilemma.

Fuller maintains that too many of the programs directed at rural America are administered by the United States Department of Agriculture (USDA), which is trying to be everybody's man and perhaps failing them all. He also notes that the heterogeneity of agricultural producers prohibits any close agricultural group and any singular approach to producers' problems.

This ties directly to Bonner's contention that differentiations must be made among commercial agriculture as an industry, low income farmers, and rural society. He also points out the need to do something about the federal, state, and local government relationship.

What Policies Then?

The objectives of our economic policies are to assist the market in resource allocation, provide income and wealth distribution, and


41 Varder Fuller, op. cit., p. 1250.

42 James T. Bonner, op. cit., p. 453.

43 Ibid., p. 455.
achieve economic stability and growth commensurate with our society's ideals, goals, and beliefs. Our failure in the past has probably been due to limited consideration to only one of the above objectives or failure to integrate time and structural change that would occur.

Neuman writes that low income farmers have three alternatives: leave the farm for nonfarm employment, find part-time off-farm employment, or acquire additional land and capital. This same point with slight modification can be made for the general population of the rural areas. They can migrate to urban areas, they can commute to urban areas, or they can capitalize within their own community to achieve economic viability.

Freeman, while Secretary of Agriculture, noted that nine of ten farm youths must look outside agriculture for rewarding occupations. Kaldor and Saupe, in the same vein, project a 64 per cent contraction in number of farms for the North Central States in 1980 from 1959. They also say that this number would still be 23 per cent higher than income efficiency criterion would dictate, so the opportunity to capitalize and remain in farming looks very dim.


45 Charles Hardin, op. cit., p. 1093.

The part-time farmer or the farmer with a second job is a very large segment of the farm population. This could be an easy transformation process for low income farmers. It affords them the security of the farm plus the stability of their own home, community, and friends.

Fuguitt reports that only 46 per cent of the part-time farmers want to return to full-time farming, thus the majority are seeking an alternative to agriculture.47

Hathaway and Perkins, however, point out that nine of every ten farmers who try off-farm jobs return to farming.48 They contend that farming is the best alternative use of these human resources and that returns to farm labor have been overestimated, that is, the quality is not as high as is often assumed. Two points must be considered before this conclusion can be accepted. First, the non-agricultural job opportunities in rural areas are scarce and unemployment is higher than in urban areas. Second, the training that most of these people have does not permit easy assimilation. This would then force many farmers to either break completely with their community or accept farming even though dissatisfaction is noted.


Migration is the third alternative for low income farmers. The reasons of low income in rural areas often are carried over by the individual to a new urban setting (lack of education and low achievement profile). It must also be remembered that the more successful and dynamic are the most likely to migrate, not the low income group per se. Olson points out that forced migration has a very high social cost for the individual and the community. In light of Heady's analysis mentioned in Chapter II, the effect on the rural community is easily seen, but the urban community is also affected by the needs of welfare, additional services, and diseconomies due to size and crowding.

Olson also notes that a worker's strongest attachment is to his community. Rico's analysis of rural migrants in Columbus, Ohio affirms this lasting attachment to their original communities. He also found that while most of these people were satisfied with Columbus, the opportunities and life they found was not up to their expectations.

The other facet of the rural poverty problem is the nonfarm group. Their situation is much the same as the farm group with a few exceptions. They do not have a farm to fall back on if there are no


50 Ibid., p. 987.

51 Jesus Rico, "Immigrants From the Appalachian Region to the City of Columbus, Ohio: A Case Study" (unpublished Master's thesis, The Ohio State University, 1969), p. 92.
jobs in the area. They are almost forced to migrate to live. Rural communities have, in general, very limited welfare programs. And employment offices and counseling services are lacking.

The commuter possibly exists only if there is an urban center within a reasonable distance and demands a capital investment for dependable transportation.

Migration for either rural group usually has the requisite of enough money to move, relocate, and carry the family until employment is found. Rico found that this was often accomplished in steps, that is, the husband or wife in nearly 50 per cent of the cases would go to an urban center and find employment then the family would join him or her later.\(^{52}\) This causes substantial trauma for a family at best and could be very bad if the separation were prolonged.

Rico also found that nearly 58 per cent of the migrants temporarily relocated with friends or relatives who had preceded them.\(^{53}\) This eliminates some of the money costs of migration, but it also limits migration to selected cities and the method to people who know someone in urban areas.

Two general statements on the advantages or rather disadvantages of migration to urban areas are listed in the report of the Commission on Intergovernmental Relations. They note that the urban ghettos are

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\(^{52}\)Ibid., p. 91.

\(^{53}\)Ibid., p. 83.
explosive and that high population densities are directly correlated with social ills. They also quote Winston who say that cities are failing man physically, socially, spiritually, and physiologically. In view of this, migration to urban areas does not seem to be the best answer for rural poor.

The other alternative for rural persons is the capitalization and development of their communities to achieve renewed viability. This has a much better potential than does the same idea for farmers. Improved communications and transportation have negated the need for extreme concentrations of labor and business. Stout has noted that the meat industry went through three stages reflecting the needs of the market and the available technology. It was at first very widely dispersed to provide supply at the very source of demand. Then it moved to a very high degree of concentration around Chicago and now there is again decentralization, but at a much larger scale to provide economies of scale. Stout compares this phenomena to the urban/rural phenomena by noting that each stage was achieved after the basic determinates had disappeared and there was obsolescence of the structure even as it was being built. This, in his view, may be the case with urban centers.

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54 Advisory Commission on Intergovernmental Relations, op. cit., p. 55.
55 Ibid., p. 56.
56 Thomas Stout. An interview at The Ohio State University, Columbus, Ohio, 1969.
57 Ibid.
The Commission on Intergovernmental Relations also noted the appearance of diseconomies in cities at the 250,000 level and which became pronounced at 500,000. However, they and a study at The Ohio State University found that a region needed a center of about 25,000 to provide a satisfactory array of services.

This indicates the need to develop programs that will stimulate a more even economic growth geographically and that permit deficient communities the opportunity to become viable and competitive. Such a thrust permits an easier transition from farm to nonfarm employment, it will offer rural poor a chance at home, and end rural community deterioration.

There are also program needs at a micro level which must be met. These programs must be tailored to people in poverty and is the basis of the empirical and analytical work of this study which follows.

58 Advisory Commission on Intergovernmental Relations, op. cit., p. 47.

59 Ibid., p. 48 and H. Phillips and J. Bottum, Ohio Appalachia Regional Community Study (Columbus, Ohio: Ohio Agricultural Research and Development Center and The Ohio State University, 1968).
CHAPTER III

THE STUDY

The mind is the great lever of all things: human thought is the means by which human ends are ultimately answered.

Daniel Webster

The Original Sample

The empirical work upon which this study is based was done by the Statistical Reporting Service of the United States Department of Agriculture. The survey, a Rural Life Survey, was conducted in April of 1967 in the East North Central States. This region includes Ohio, Indiana, Illinois, Michigan, and Wisconsin. Seventy-two counties were chosen for total representiveness of the region and approximately 4,000 interviews of farm families and rural nonfarm families were acquired.

The questionnaire includes areas on family income, assets and liabilities, education, attitudes, employment, food buying patterns, medical costs, and housing. Subsequent work at The Ohio State University added information on population density, agricultural status, and proximity to urban areas for each of the counties. The stated purpose of the survey is to acquire the data necessary to determine the extent
of and define the characteristics and possible cures of rural poverty in a rich farming area.  

The Rural Life Survey was preceded by a Pesticide Study and General Farm Survey during which an area profile sheet was compiled. This sheet contained enough information to determine if a dwelling was occupied, if the occupant was a farm operator, and if his 1966 gross sales were less than or more than $10,000. Upon this basis, a segment of each county was chosen that would contain a sample of about fifty households of farm operators with less than $10,000 gross sales in 1966 or other rural nonfarm households. The survey has been deemed statistically representative of the five state region, but not at a local or state level.

The Study Sample

The Rural Life Survey is much more extensive than is the scope of this study and only selected data have been used. From the original sample information, only heads of households has been taken for which there are 3,084 observations. Likewise, only selected variables have been used. The variables used fall into several general classes about the individual, family characteristics, income and liabilities, assets, attitudes, geographic characteristics, employment, and education. The individual variables will be discussed later in the methodology chapter as will be the limitations of the variables.

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Basic Premises

1. There is poverty in the rural areas of the United States in both the agricultural sector and the non-agricultural sector.

2. The policies and programs directed at the elimination of poverty have not been fully successful and have at times intensified problems.

3. Agriculture cannot provide sufficient opportunities for the rural poor and it will continue to lose its ability to assimilate labor.

4. Rural to urban migration is not a panacea.

5. The rural poor are not a homogeneous group, but rather highly diversified and single programs cannot solve all of the problems nor help all of the people involved.

6. The causes of poverty are both micro and macro in origin, but there is a high degree of interaction.

7. There is a priority of causes and critical levels which can be identified.

8. Programs must be tailored to the individual needs depending upon their situation and the factors of causation involved.

9. Likewise, attention must be given to the macro climate for any long-term success to be achieved.

These general "truths" or beliefs are the lodestones that afford the direction and hopes of this study.
The Objectives

1. To define relatively homogeneous subgroups of rural poor.
2. To isolate the causal factors of poverty.
3. To establish what, if any, interaction occurs among the variables of poverty determination.
4. To establish critical levels of income and determinant variables.
5. To suggest viable alternatives for policy and programs.

The General Hypotheses

Two general hypotheses are used in the attempt to satisfy the objectives stated above.

Hypothesis I: There are statistically significant and definable subgroups of poor people in the larger general class of rural poor.

Hypothesis II: There are significant variables that cause poverty in the rural areas.

These two general hypotheses will be tested to first identify any subgroups of poor people by their individual characteristics for use in program development and second to identify what variables are significant in causation, their priority, and their critical levels.

The methodology to achieve these ends is discussed in the next chapter.
CHAPTER IV

METHODOLOGY

Causation in social sciences is never simple and single as in physics or biology, but always multiple and complex. And for this, a new technique is necessary.

Julian Huxley

Introduction

Two statistical techniques were used in this study to analyze the data. The first technique used is a relatively new technique, Automatic Interaction Detection Program (AID), developed by Sonquist and Morgan at the University of Michigan in the early 1960's. The AID technique is especially useful in the analysis of nominal or ordinal scale variables and for the detection of interaction among variables. This is particularly useful in the social sciences and this study.

The second technique is the more standard stepwise multiple regression technique which is very useful for interval scale, continuous

variables. The specific program used was developed by Jon Cunnyngham at The Ohio State University.

These two techniques have certain mathematical similarities in their internal calculations and procedures, but their value is the complementary nature of the two outputs along with added flexibility of input variables.

**Automatic Interaction Detection**

This technique combines the descriptive nature of cross tabulation with the mathematical procedure of stepwise linear regression. The objective is to split the "parent group," original observations, into increasingly homogeneous subgroups. The program splits the parent group or subsequent "candidate group" bilaterally based upon "predictor" (independent variable) values. The splitting is based upon the unexplained variation of the dependent variable of a sample, either parent sample or candidate group. The split at each step is upon the variable that will minimize within group variation and maximize between group variation.

To accomplish this, all predictor variables must be listed in classes (nominal, ordinal, or interval scales) with a limit of 39 classes for any single predictor and a limit of 300 classes in total. Each predictor can be defined as a "free" variable or a "monotonic" variable. A free variable will permit any possible set combination

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62 Jon Cunnyngham, "OSU/Economic Regression Program Operating Instructions" (unpublished paper, Columbus, Ohio, 1968).
of the variable classes. While the basic mathematical analysis is based on linear assumption, this freedom permits allowance for non-linear predictor variable dependent variable relationships. This is very useful in variable of nominal scale and in continuous variables such as age where income and age might describe a curvilinear relationship.

The monotonic variable will only permit an ordinal split. That is, the two groups are mutually exclusive in regard to size of the classes contained; one group has classes that are either all larger than or all smaller than any of the classes in the other group. This is more restrictive in the assumption of constant direction of the relationship between the predictor variable and the dependent variable. However, it can define a critical level where the slope of the relationship changes, which normal linear regression techniques cannot do.

Procedural steps

The internal procedure of the AID Program is listed below.

1. Divides the total sample into classes corresponding to the values of the first predictor variable.

2. Tests every possible predictor value set of the sample for reduction of variation.

3. Chooses the "best" (greatest $R^2$ or ratio of between sums of squares to total sums of squares) set given the program restrictions.

4. Repeats steps one through three for each predictor variable.
5. Chooses the best predictor and value set of that predictor (the predictor whose split into two subgroups will reduce total variation the most).

6. It examines resulting subgroups or candidate groups in order of the amount of dependent variable variation contained, largest to smallest.

7. Continues splitting steps one through six until:
   a. The subgroup has too few observations (25 x 2),
   b. The subgroup variation is less than specified as being necessary (0.5 per cent),
   c. The best split will not reduce the total variation by some specified level (0.5 per cent), or
   d. The maximum number of final groups (90) have been created.

The output

The splitting of groups creates a tree like effect. The AID tree shows the order of subgroup split (subgroup number), the predictor variable split at each step, the dependent value mean and number of observations in each group, and the reduction of variation achieved at each step.

The AID tree has two distinguishable split types, "branch" and "twig". The branch splitting is a relatively even split of a candidate group into two new candidate groups. This implies a less than normal distribution of the splitting variable relative to the unused
predictor variable, but not necessarily bimodal. The new candidate groups may be viewed as new samples, which are subjected to the AID technique. If branching occurs early in the AID tree, attention to symmetry of the branches splitting can indicate interaction. That is, if two branches split on different variables, there is an indication of interaction not detected by normal regression analysis.

The twig effect is small subgroups that split off from the branch and are often blocked from further splitting. Implied in this is a skewed distribution of the dependent variable over the classes of the splitting predictor.

While the predictor variable with the highest $R^2$ is chosen for splitting at each step, there are often other variables which are nearly as important in determination for a given subgroup indicating interaction.

The detection of these is the purpose of the program and indicates interaction where the two predictors are highly correlated for some subgroups, but not others.

The AID tree, interaction tables, final group values, and final group descriptions are presented in the analysis chapter.

Unique problems of AID

The AID technique has a great deal of flexibility and has some ability to rid the chaff from the input. However, the parameters specified by the user and the nature of the input variables both as to their pertinence and their specification will determine the technique's efficiency.
The problem is bilateral; if the user is too restrictive, many relevant variables, splits, and groups will not be realized or if the user is not sufficiently restrictive, much of the analysis will be spurious, irrelevant, and confusing. To strike the happy median is the challenge, but to achieve this exactly would probably mean the user knows the data and causations so well that the use of the program is unnecessary. Secondly, the technique is very costly so repeated trial and error runs become prohibitive.

The instruction here is that preparation of the input data demands very careful and thoughtful consideration. The input should reflect the accepted theory, but have enough flexibility to disprove it if that is, in fact, the case. Some of the specific problems are outlined below.

One of the major problems comes from the requisite that all predictor variables be in classes. The number of classes and interval length are very pertinent to detection of interaction. In the case of nominal scale variables, this creates little or no problem, but in the case of continuous variables, the user's choice of class intervals could mask relationships or cause misleading results. An example would be where a critical capital base is $25,000, but the class that includes this critical value covers the range of $10,000 through $50,000. The results might indicate $10,000 as critical or else not find any relevant relationship for this variable.

If, on the other hand, the classes are too small, the program may indicate a large number of "critical" levels leaving the
researcher the problem of determining which is, in fact, the important one.

The second group of problems is associated with the termination limits of the program's minimum group size, minimum variation reduction, and minimum total variation inclusion. In all of these cases, if limits are made too low, a large number of irrelevant subgroups become possible. If the limits are too high, then there is the danger that some relevant splits and groups may not be broken out.

The author used the program developer's recommendations, theory, and limited trial and error runs to arrive at the final groupings, however, these are still probably not optimal.

**Stepwise Regression**

The stepwise regression technique was employed to complement and serve as a check of the AID technique. It provides a priority ordering of variables, coefficients of determination, and sets of variables which together can be used as explanatory models.

**Procedural steps**

The procedural steps of the stepwise regression technique are as follows.

1. Chooses the independent variable having the highest correlation with the dependent variable.

2. Creates a regression equation with this independent variable.
3. Chooses the remaining independent variable having the highest partial correlation coefficient with the dependent variable.

4. Enters that variable into the multiple regression equation.

5. Tests each independent variable in the regression for significance and removes any variable not meeting the pre-set significance criterion.

6. Repeats steps three through five until any one of the following criterion is met.

   a. A given number of independent variables has been included in the regression equation.

   b. Inclusion of any one of the remaining independent variables will not reduce the total variation by a given proportion.

   c. All independent variables have been included in the regression equation.

This technique has an advantage over the AID technique for continuous variables in that it gives a value to the causation and affords a "macro" model for the sample. However, nominal variables can be entered as "dummy variables".

The output

At each step of the stepwise regression analysis a summary of the model for that step is presented. This includes a list of variables included as to order of entry, the t-value for each regression
coefficient, the multiple coefficient of determination ($R^2$) for the model, the F-value of the significance of the regression, and standard error of the estimate.

**In Conclusion**

These two techniques separately and together have been used to both test the general hypotheses and to provide the analytical basis for achievement of the objectives of this study.
CHAPTER V

ANALYSIS

Science substitutes unimportant questions that can be answered for important questions that can't be answered.

Kenneth Boulding

Introduction

The original sample is extremely varied in that it represents the entire spectra of rural living with the exception of farmers with gross sales of over $10,000 per year. The extreme variance and heterogeneity of the sample precludes any macro analysis beyond a brief descriptive statement that is included in the AID analysis.

To analyze economic success or failure which are assumed to parallel affluence or poverty, gross income has been used as the dependent variable. The independent variables or predictor variables in the AID program analysis fall into five general classes:

I. Personal, including:
   a. sex of the head of household,
   b. age of the head,
   c. education of the head,
   d. physical limitation of the head,
   e. house tenure,
f. house condition, and
g. house size.

II. Assets and Liabilities, including:
   a. total assets,
   b. real estate assets,
   c. life insurance,
   d. total debt, and
   e. debt service costs/1966.

III. Employment, including:
   a. type of job,
   b. reason for nonavailability for work,
   c. distance traveled to job,
   d. number of jobs held by head/1966,
   e. number of earners in household, and
   f. who is the major earner in the household.

IV. Attitudes of the Head-of-the-Household, including:
   a. employment satisfaction,
   b. is income considered adequate,
   c. interest in additional education, and
   d. willing to move (why or why not).

V. Locational Data, including:
   a. population density of the county,
   b. agricultural status of the county,
   c. accessibility to urban centers, and
d. whether the Federal Food Stamp Program is, or has been, available in the county. 63

Many of these variables could be assigned to other general groups than they are now. However, this is only a general listing and all variables are free to interact in the AID program or enter the regression model depending on their relevance.

The AID Program Analysis

The purpose of the AID technique is to define relatively homogeneous subgroups from a heterogeneous original sample, to isolate interaction between or among variables in this determination, and generally to establish priorities of the predictor variables in the various branches of the AID Tree.

The AID Tree for the study sample is presented in Figures 4 and 5. Figure 4 represents the "agricultural" branch as created by the first split of the parent group, while Figure 5 represents the "non-agricultural" branch of the parent group. These two branches are only generally defined as agricultural and non-agricultural since each contains elements of both, however, it does indicate the basic element of the first split.

63 A list of the variables and the class values used in the AID program is found in Appendix I.
Fig. 4.--The agricultural branch of the AID Tree.
Fig. 5.--The non-agricultural branch of the AID Tree.
At each split, the step number of the split, the t-value of the split, and the name of the variable on which the split is made are indicated. The resultant subgroups are represented by a rectangle whose number is outside of the northwest corner and contained in each one is the variable \( (V) \) number of the variable upon which the split is made, the classes \( (C) \) of the variable included in the subgroup, the number \( (N) \) of observations included in the subgroup, and finally the mean \( (M) \) value of the dependent variable, income, for the subgroup.

The terminal groups are those that have not been split due to the limits of the program. However, these groups are checked by the program and a variable by variable listing is made which enables a fairly complete description and intergroup analysis.

To reap the benefits of the AID Tree, three processes were employed. First, a general branch effect analysis has been done along with the twig effect. Second, an intergroup analysis of selected groups for certain variables through the use of chi-square tests. This assists in the interaction determination which can also be seen while considering the branching effects. Third, the terminal groups are examined and described as to their variable characteristics.

**Branch and twig analysis**

The first two branches have been generally defined above as the agricultural and the non-agricultural branches. The former being presented in Figure 4 and represented by subgroup 2. The latter is presented in Figure 5 and is represented by subgroup 3. Subgroup 2 contains 431 observations who are full-time farmers with no other jobs,
and 468 observations of persons who are primarily retired, but some unemployed persons or those who failed to report their job type. Subgroup 3 contains 1488 observations of persons who had only nonfarm jobs and 697 observations of persons with both farm and nonfarm jobs, so all of this group had nonfarm jobs. The mean income for each class in groups 2 and 3 is: $3,195 for class 1, undefined; $3,651 for class 4, farmers; $7,411 for class 3, farm plus nonfarm; and $8,040 for class 2, nonfarm.

The agricultural branch

To continue on the agricultural branch, group 2 branches at step 10 on the major earner in the household predictor. The split resulted in group 20, which contains classes 1, 2, 3, and 4, and group 21 which contains classes 5 and 6. Classes 1, 2, and 3 generally refer to retirement type households while class 4 is households where the head is the major earner. Class 5 represents the households where the wife is the major earner and class 6 is those that the major earner is some other relative of the head. The mean incomes for these classes are: class 1 = $1,860, class 2 = $1,762, class 3 = $2,667, class 4 = $3,259, class 5 = $4,963, and class 6 = $6,757.

Group 20 splits on the variable total assets into the terminal groups 30 and 31. Group 30 contains classes 0, 1, 2, 3, 4, 5, and 6 or those households with less than $35,000 worth of total assets. Group 31 contains classes 7, 8, 9, and 10 or those households with over $35,000 in total assets.
Group 21 splits on the variable of the number of earners in the household into terminal groups 34 and 35. Group 34 contains classes 1 and 2 or 1 or 2 earners. Group 35 contains classes 3, 4, and 5 or 3, 4, or 5 earners.

These four terminal groups conclude the agricultural branch. These groups along with the other terminal groups will be examined further after the non-agricultural branch has been broken down.

The non-agricultural branch

Group 3, the base group of the non-agricultural sector, splits at step 2 on the variable total assets into groups 4 and 5. Group 4 contains classes 0 through 6 or those households with less than $35,000 in total assets while group 5 contains classes 7 through 10 or those households with over $35,000 total assets. The mean incomes for each of these classes are: class 0 = $4,833, class 1 = $6,222, class 2 = $6,623, class 3 = $7,412, class 4 = $7,270, class 5 = $8,016, class 6 = $7,927, class 7 = $9,432, class 8 = $9,310, class 9 = $9,252, and class 10 = $10,863.

The cause and effect relationship of income and assets is not clear. It is as likely that the assets are the result of high income as the inverse situation.

Moving out the upper branch of the non-agricultural branch group 5 splits at step 3 on the variable education of the head. The twig effect in the creation of terminal group 7 isolates the group in which all of the heads have at least one college degree. This group has an
average income of $15,631. Group 6 is a continuation of the upper branch and contains classes 0 through 5 or those with less than a college degree. The mean incomes for these classes are: 0 = $11,284, 1 = $8,336, 2 = $9,151, 3 = $10,199, 4 = $9,703, and 5 = $10,125.

At this split, a positive correlation between education and income can be seen, but the 0 class or those with less than six years of education has the second highest income from group 5. Group 6 shows a rather random relationship between income and education. It is evident that interaction between assets and education is present. A large asset base in the form of a business could compensate the lack of human investment in the form of education resulting in similar incomes. Education is measured by attained level of formal schooling not by intellectual ability so education is not absolutely necessary except for certain professions such as medicine, law, or teaching, which are isolated here in group 7.

Group 6 splits at step 4 on the variable, number of earners, into group 8 which has one earner per household with an average income of $7,976 and group 9 which has more than one earner per household. In group 9, 71 per cent of the households have two earners, 22 per cent have three, and only 7 per cent have more than three. The mean incomes for these classes are: 2 = $10,250, 3 = $12,098, 4 = $12,091, and 5 = $15,174.

The pertinent point at this step is the difference between the incomes of households with one and two earners. Most families have two potential earners, but relatively few have more than two. The
possibility of a wife taking a job is a distinct possibility for improved family income.

Group 8 splits at step 16 on the variable income adequacy into the two terminal groups 32 and 33. While these will be examined in more detail later, group 33 represents those who feel they have adequate income, average $8,599, and group 32 represents those who feel their income is inadequate at an average of $5,239.

Group 9 splits at step 6 on the variable access to cities into terminal group 12 and group 13. Group 12 represents those areas with poor to fair accessibility. Classes 1 and 2 have no major cities within a 40 mile radius while class 3 does have one major or several minor cities within the 40 mile radius. Classes 4 and 5 in group 13 have at least two major cities (SMSA) and possibly several minor cities. The mean incomes for each class are: 1 = $9,031, 2 = $9,338, 3 = $8,927, 4 = $11,324, and 5 = $12,425.

Accessibility to a job market, which cities represent, is important for individuals in finding first a job, secondly competitive wages, and here it offers employment opportunities for the second or subsequent wage earner. This latter condition is often very limited in areas that have no large cities.

Group 13 splits at step 7 on the variable age of head into the two terminal groups 14 and 15. At first glance, this age variable appears random in relation, but the two classes 2 and 8 are really the only unexpected results. Class 2 only contains three observations so it is not typical of the 20 to 25 year old group. Class 8 or the 50
to 55 year old group is assigned to group 14 even though it approaches
group 15. Class 11, those over 65, is the only group that is signif-
icantly different so the profile does approach the normal life income
curve with slight imperfections.

Returning to the lower branch of Figure 5, group 4 splits at
step 5 on the variable number of earners into groups 10 and 11. Group
10 contains households with only one earner while group 11 contains
those with more than one. In group 11, 78 per cent of the households
had two earners and 17 per cent had three; this leaves only 5 per cent
with over three earners so again from the sample and average household
potential, the relevant question is between one and two earners. The
average income for each class is: 1 = $5,762, 2 = $7,426, 3 = $8,905,
4 = $12,115, and 5 = $11,393.

Group 10 splits at step 13 on the sex of the head into the two
terminal groups 26 and 27. Group 27 contains the male heads with
wives while group 26 contains the single male heads (3) and female
heads (4). The class averages are: 1 = $6,127, 3 = $3,525, and 4 =
$3,096. These groups will be examined further later.

Group 11 splits at step 8 on the age of head into terminal group
16 containing those heads over 65 and into group 17 containing the
heads who are less than 65. Group 16 isolates the group commonly con-
sidered of retirement age. The mean incomes for the classes in group
17 are: 2 = $7,249, 3 = $8,355, 4 = $7,759, 5 = $8,308, 6 = $8,505,
7 = $8,506, 8 = $8,421, 9 = $7,935, and 10 = $7,073. Again there is
variation from the normal expected life income curve, but it does ap-
proach the expected bell shaped curve of income and age.
Group 17 splits at step 9 on total assets into terminal group 18 containing households with less than $5,000 in total assets and group 19 containing households with between $5,000 and $35,000 of total assets. Little is quickly evident at this split, but 90 per cent of group 18 reported their houses were in very bad condition. This group is more closely examined later. The mean incomes for the classes in group 19 are: 1 = $7,799, 2 = $7,961, 3 = $8,504, 4 = $8,484, 5 = $9,383, and 6 = $8,842. The variation here and the cause/effect relationship are inconclusive.

Group 19 splits at step 11 on the number of earners into terminal group 23 and group 22. Group 23 contains households with four or five earners. It is basically families with children of employable age still in the household. The average income for each class here is: 2 = $8,057, 3 = $9,343, 4 = $12,624, and 5 = $11,393. As noted before, the number of households in the sample and potentially with more than three earners is very small.

Group 22 splits at step 12 into the two terminal groups 24 and 25 on the variable income adequacy. Group 24 is basically those who consider their income inadequate and group 25 is the group who find their income adequate.

The next part of the AID analysis is the descriptions of the terminal groups.

Terminal group descriptions

To simplify any efforts to refer back to the AID Tree, the descriptions of the terminal groups will proceed from the "upper branch"
of Figure 4 and down through it into Figure 5. The order then is: 30, 31, 35, 34, 7, 15, 14, 12, 33, 32, 27, 26, 25, 24, 23, 18, and 16.

**TG 30.**—This group has the lowest average income, $2,195, of any terminal group. It is generally characterized as pure farmer or unknown job type; the latter being retired, unemployed, or not answered. The major earner is the household head or none due to retirement or defective schedule. Finally, this group has less than $35,000 total assets.

This group is basically an elderly retired or semi-retired group. Over 55 per cent of the group are retired and only 41 per cent have jobs. This latter group are all farmers who have an average income of $2,663. Over 22 per cent of these households are headed by women and nearly 20 per cent are headed by single men. Nearly 92 per cent of this group are over 50 years of age and 71 per cent are over 65 years of age. Thirty-eight per cent have physical handicaps. Less than 2 per cent are interested in moving even though 34 per cent of the houses are in need of major repairs. Seventy-five per cent own their houses outright, 8 per cent are buying, and 13 per cent receive them rent free. About 46 per cent find their income inadequate and over 90 per cent have less than $2,500 worth of life insurance.

This group is basically a welfare group for which there are few, if any, opportunities to aid them through employment. About the only course of action is to afford them the necessary income assistance and medical aid that will permit relatively complete lives. The
farmers in this group can not be moved nor do many of them have alternatives since many have no retirement plan or asset stock or very limited ones if they do exist.

TG 31.—Group 31 is similar to group 30, but this group has over $35,000 in assets. The average income of $3,725 is still quite low. In this group, 15 per cent of the households are headed by women, 12 per cent by single men, and 73 per cent by married men. Over 41 per cent are retired and 12 per cent are unable to work. Sixty-three per cent farm though some consider themselves retired. Ninety-four per cent are over 50 years old and 59 per cent are over 65. Again there is no interest in moving and all of this group own or receive housing rent free. Only 22 per cent find their income inadequate and their average income is $3,013.

Similar to group 30, this is a retirement or near retirement group. They have limited aspirations and, due to their asset packages, can meet most of their needs. There are individuals who have additional needs, but general welfare programs for the aged are what seem the most appropriate.

TG 35.—Group 35 is generally households which have retired heads or heads who are farmers. The major earner in these households is either the female head or some relative of the head, usually a son or daughter. The final distinction from the AID Tree is that three or more wage earners are present in the household.

The specifics of the group composition are 18 per cent have female heads while 82 per cent have male heads. Seventy-eight per cent
have fair to excellent access to cities. About 33 per cent of the heads of household are retired, but in most cases these are not the major earners and most are satisfactorily employed. About 83 per cent of the heads are over 50 years old, 42 per cent are over 65, and 48 per cent are disabled. Just over 50 per cent are farmers and nearly all own their homes. There is no interest on the heads' part to move, but 38 per cent find their income inadequate at $5,727. Asset packages are varied and show no relationship to income. The family size indicates the major earner is usually unmarried or married with no children and has either assumed the farm job or taken a job off the farm.

The problem for this group is what happens to the head and the basic family when the related major earner moves or acquires his own family. While the average income of $7,612 is fairly high, the need to support parents could cause problems for a new family and the loss of this help could place the head and the household in near poverty.

In this group, similar to groups 30 and 31, these basic households represent retirement type heads. Programs to afford financial independence are necessary for both the household and the related major earner.

**TG 34.**—Group 34 parallels the branch characteristics of group 35 except in 34 there are only one or two earners and the average income of $5,005 is much lower. Again there are about 18 per cent of female headed households. The first major difference is that only 44 per cent are farmers and 56 per cent are retired or unemployed. In
this group, 55 per cent of the major earners are the wife of the head while in group 35, wives were the major earner in only 24 per cent of the cases. Along this line, the families represented were smaller usually representing husband/wife households and in a few cases, one child usually mature. Again, 34 per cent found their income inadequate at an average $4,218, but no interest in moving.

This is a case of retirement types and the need is programs to carry these people during their old age. The biggest problem seems to be the need for the wife to continue working to support the family at this advanced age and the same problem noted before in group 35 when the related earner leaves or acquires a family.

The aforementioned four terminal groups represent the retirement sector of rural life and the pure farmer sector which is near retirement and unviable commercially. These people represent the plight of the aged throughout our society. Little can be done for them, but maintaining them and permitting them to continue their lives in their present locals. The policy implications are presented in the next chapter.

Turning now to the terminal groups in the non-agricultural branch represented by Figure 5.

TG 7.—Group 7 is representative of households with heads who have at least a college degree and total assets of over $35,000. There is very little to gain from this group in the analysis of poverty or necessary programs other than the clear advantage of education and wealth.
TG 15.—Group 15 is representative of households with total assets of over $35,000, heads who have less than a college degree, good access to cities and urban centers, and generally but not clearly middle age group heads. Nearly all of the heads were satisfactorily employed and there is no interest in moving. Fifty-six per cent had finished high school and 98 per cent had at least eight years of education. Forty-three per cent indicated interest in additional education. Thirty-eight per cent had two jobs which is the same number that farm. In 91 per cent of the cases, the major earner was the male head of household. In 12 per cent of the cases, income was considered inadequate, but the average income of this group is $11,264.

The basic indications from this group are that large asset bases can offset the lack of education. Likewise, the urban nature of the regions involved affords many job opportunities to both farmers and non-farmers of rural areas.

TG 14.—Group 14 differs from group 15 on the AID Tree only on the age of the head of household. This group has a near retirement age group of over 65 and a relatively younger group between 25 and 35, but this is not a clear distinction. Forty-four per cent held two jobs which is exactly the same as the per cent who had farms. The only difference other than age is that 30 per cent of the heads had less than eight years of education and their incomes were substantially lower.

The differences between groups 14 and 15 are basically that 14 contains a number of heads over 65 years of age, individuals, and a
segment with relatively less education. Eight years of education seems critical, but this cannot be indicted at this point.

**TG 12.**--Group 12, like groups 14 and 15, is on the high asset, $35,000 and over, branch with heads of households with less than a college degree and two or more wage earners. It breaks from the previous two groups at the question of access to cities in that group 12 has poor to fair access. This is a male head group who are satisfactorily employed. The age profile of the heads of households is slightly concentrated in the middle to slightly older age brackets and these have higher incomes than do the extremes of the age groups. Forty-three per cent are interested in additional education while only 45 per cent have finished high school. Again, the number holding two jobs and the number with farms is exactly the same at 63 per cent. In 76 per cent of the cases, there are two wage earners and in 20 per cent, there are three. While the average income of the group at $9,056 is relatively high, 20 per cent feel their income was inadequate; their average income is $6,652.

This group compares fairly closely to group 15 except for the access to cities and the proportion of part-time farmers. However, the factor of urban access seems to offer more and better opportunities for part-time farmers and their families. The part-time farmers in 15 earned an average of $11,850, while the same group in 12 averaged $8,679.

**TG 35.**--Group 33 is representative of the high asset branch of the non-agricultural part of the tree. The heads have less than a
college education and there is only one wage earner in the household. This is basically a male headed group with fair to excellent access to urban areas, over 75 per cent. They are on the whole satisfactorily employed and over 30 years old. Sixty-two per cent have finished high school and 95 per cent have at least eight years of education. Again, 47 per cent have farms and 47 per cent hold two jobs. The head is the major wage earner in over 96 per cent of the cases and they all feel that their income, $8,599, is adequate. No interest in moving is evident in this group.

**TG 32.**—Group 32 parallels group 33 except this group feels their income is inadequate at an average of $5,239. There are very few differences between groups 32 and 33 other than the level of income. There is a larger percentage of part-time farmers and multiple job holders, 61 and 72. A larger proportion of this group is willing to move, 14 per cent. The heads are slightly skewed towards the younger age groups.

There may be the stimulus here for wives to enter the labor market or for additional emphasis by the heads on nonfarm jobs.

**TG 27.**—At this point, the analysis is moved to the low asset, less than $35,000, branch of the non-agricultural part of the AID Tree. Group 27 is representative of households with only one wage earner and a married male head. It is a large group containing 641 households with an average income of $6,127. This group is generally satisfactorily employed with no skewness in the age profile. Only about 40 per cent have finished high school, but 89 per cent have finished at
least eight years of education. Forty-four per cent hold more than
one job and 28 per cent have a farm job plus some other job. A large
segment, 32 per cent, considers their income inadequate. This seg­
ment's average income is $5,380, while the adequate income segment's
average income is $6,506. Eighteen per cent are interested in moving
and this group is representative of lower incomes, average is $5,380,
and basically for economic reasons. Less than 4 per cent of the
farmers said they would not move because of their farm. There are in­
dications here that the number of jobs and interest in moving are re­
lated inversely to the adequacy of income.

TG 26.—Group 26 parallels group 27 except the head is either a
single male, 53 per cent, or a single female, 47 per cent. This group
is skewed towards over 50 in age of the head, 82 per cent. Over 66
per cent had less than a high school education, but five had a college
degree. Thirty-eight per cent feel their income, average $2,723, is
inadequate, while 62 per cent, whose average income is $3,697, find it
adequate. Fourteen per cent are willing to move and this represents
the higher income segment of the group and usually for economic rea­
sons.

This group points up the plight of widowed heads of families,
especially those with no profession. It is a near retirement type
group and points up a possible level of income adequacy for such
types.
TG 25.—Group 25 represents the first group of multiple earner households on the low asset branch. It is represented with heads who are less than 65, with assets between $5,000 and $35,000, two or three wage earners in the household, and households where income is felt to be adequate. These are basically male headed households with an average income of $8,809. They are basically satisfied in their employment and 77 per cent live in areas of fair to excellent access to cities. The part-time farm segment represents 26 per cent of the group and 40 per cent have more than one job. In 81 per cent of the cases, there are two wage earners and the rest have three. About 11 per cent are willing to move, but they are high income types who are interested in moving only if all aspects of life improve with the move. Very few of the farmers refuse to move due to their farm.

TG 24.—This group parallels group 25 except income is felt to be inadequate at $6,952. A large portion of this group travel over 15 miles to work, 43 per cent, and 25 per cent travel over 25 miles one-way. As would be expected, more are interested in moving, 31 per cent, and 14 per cent would move with no qualifications while 21 per cent more would move if general life style and income improved. The "movers" here are the lower income groups. Migration in the inadequate income groups seems to stem from economic reasons versus status and life style in adequate income groups.

TG 23.—Group 23 is a result of a twig effect in isolating households with abnormally large numbers of wage earners, four or five. This group has no value in the analysis.
Group 18 represents those households with two or more earners, with the head being less than 65, and assets of less than $5,000. The average income here is $5,472. In regards to job, 13 per cent were dissatisfied with their job and 36 per cent held more than one job. Seventy per cent had less than a high school education, but 57 per cent indicated interest in additional education. An abnormally high per cent, 20, indicated physical handicaps while only 11 per cent had farms. Forty-six per cent felt their income was inadequate and 35 per cent were willing to move; 17 per cent unqualified and 16 per cent if total life style improved. These movers were the lower income group which parallels group 24.

This group represents families with very small economic bases and who are relatively dissatisfied, but have limited opportunities.

Group 16 is a twig group in which households with heads of over 65 are isolated. It is generally described as having two or more wage earners and less than $35,000 in total assets. About 75 per cent have less than a high school education and 31 per cent have some physical handicaps. There are 19 per cent who have farms and 87 per cent have two wage earners. Income was considered inadequate by 41 per cent whose average income is $2,919, but none are interested in moving. This is a near retirement or semi-retirement group. Again, the plight of the elderly is brought out and some consideration must be made for these people.
Terminal groups profile

The profile of the fifteen major terminal groups are summarized in Table 8 for some of the major characteristics of differentiation. Group 7, which contains those heads with at least a college degree and group 23 that consists of households with four or more wage earners have been omitted.

Intergroup chi-square analysis

Chi-square tests were performed to analyze and compare the variables at different steps along the AID Tree. This affords a statistical test for the distribution differences, which were noted before from a felt criterion.

The most extensive comparison was made between group 2 and group 3. The results are contained in Table 9.

This chi-square analysis indicates that the break on job type has isolated two large groups that are quite different in almost every characteristic examined. Additional comments on these findings will be reserved for the summary section of AID analysis.

The next intergroup chi-square analysis is on groups 4 and 5, the first major split on the non-agricultural branch; seen in Table 10.

This comparison gives some of the general relationships of "success and satisfaction" or failure and dissatisfaction with variables in the analysis. Again, these relationships will be reserved for the summary section of AID.
TABLE 8
GENERAL PROFILE OF TERMINAL GROUPS FOR SELECTED CHARACTERISTICS

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<td>3 or More</td>
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<tr>
<td>Mean Income (Dollars)</td>
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</tr>
<tr>
<td>Mean Income (Dollars)</td>
<td>2193</td>
<td>3774</td>
<td>712</td>
<td>5028</td>
<td>3328</td>
<td>5350</td>
<td>9034</td>
<td>8599</td>
<td>5239</td>
<td>6127</td>
<td>6324</td>
<td>8069</td>
<td>6952</td>
<td>9472</td>
<td>4151</td>
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<tr>
<td>% Adequate Income</td>
<td>47</td>
<td>70</td>
<td>61</td>
<td>59</td>
<td>89</td>
<td>91</td>
<td>79</td>
<td>100</td>
<td>-</td>
<td>67</td>
<td>62</td>
<td>100</td>
<td>-</td>
<td>56</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (Dollars)</td>
<td>2598</td>
<td>4146</td>
<td>8743</td>
<td>5758</td>
<td>11,513</td>
<td>9671</td>
<td>9647</td>
<td>8599</td>
<td>-</td>
<td>6506</td>
<td>6396</td>
<td>8069</td>
<td>-</td>
<td>6213</td>
<td>5062</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Inadequate Income</td>
<td>40</td>
<td>22</td>
<td>39</td>
<td>41</td>
<td>11</td>
<td>9</td>
<td>21</td>
<td>-</td>
<td>100</td>
<td>33</td>
<td>39</td>
<td>-</td>
<td>100</td>
<td>44</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Mean (Dollars)</td>
<td>1760</td>
<td>3013</td>
<td>5727</td>
<td>4218</td>
<td>11,264</td>
<td>10,320</td>
<td>6552</td>
<td>-</td>
<td>5239</td>
<td>3300</td>
<td>2723</td>
<td>-</td>
<td>6952</td>
<td>4602</td>
<td>2915</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Under: Over 35,000
Over 35,000
Mean Income (Dollars)
% Adequate Income
Mean (Dollars)
% Inadequate Income
TABLE 9
CHI-SQUARE COMPARISON OF THE AGRICULTURAL AND NON-AGRICULTURAL BRANCHES (GROUPS 2 AND 3)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Degrees of Freedom</th>
<th>Chi-square Value</th>
<th>Significance Level</th>
<th>General Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-1 Sex of head</td>
<td>1</td>
<td>386.588</td>
<td>0.01</td>
<td>Group 2 is skewed towards single male heads and female heads, Group 3 married male heads.</td>
</tr>
<tr>
<td>V-2 Population density</td>
<td>4</td>
<td>36.607</td>
<td>0.01</td>
<td>Group 2 is skewed towards less dense; Group 3 towards more dense.</td>
</tr>
<tr>
<td>V-3 Access to cities</td>
<td>4</td>
<td>26.397</td>
<td>0.01</td>
<td>Group 2 has poorer access; Group 3 has better access.</td>
</tr>
<tr>
<td>V-4 Agricultural status</td>
<td>5</td>
<td>22.049</td>
<td>0.01</td>
<td>Group 2 is skewed slightly towards the large farm while Group 3 is towards small farm end.</td>
</tr>
<tr>
<td>V-6 Non-available work</td>
<td>4</td>
<td>1493.660</td>
<td>0.01</td>
<td>Group 2 has a very large number of retired heads.</td>
</tr>
<tr>
<td>V-7 Job satisfaction</td>
<td>8</td>
<td>1099.771</td>
<td>0.01</td>
<td>Group 2 has large number of retired heads.</td>
</tr>
<tr>
<td>V-8 Age of head</td>
<td>9</td>
<td>1341.996</td>
<td>0.01</td>
<td>Group 2 is very skewed towards elderly and over 65; Group 3 fairly normal.</td>
</tr>
<tr>
<td>V-9 Education</td>
<td>6</td>
<td>412.202</td>
<td>0.01</td>
<td>Group 2 is very skewed towards low education; Group 3 fairly normal.</td>
</tr>
<tr>
<td>V-11 Physical Handicap</td>
<td>1</td>
<td>275.035</td>
<td>0.01</td>
<td>Group 2 has a large number of handicapped heads.</td>
</tr>
<tr>
<td>Variable</td>
<td>Degrees of Freedom</td>
<td>Chi-square Value</td>
<td>Significance Level</td>
<td>General Relationship</td>
</tr>
<tr>
<td>----------------</td>
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<td>------------------</td>
<td>-------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>V-18 Major earner</td>
<td>5</td>
<td>1324.412</td>
<td>0.01</td>
<td>Group 2 is heavily dependent on earners other than head or on female heads.</td>
</tr>
<tr>
<td>V-19 Life insurance</td>
<td>10</td>
<td>466.861</td>
<td>0.01</td>
<td>Group 2 has very little or no insurance; Group 3 usually has some.</td>
</tr>
<tr>
<td>V-20 Total assets</td>
<td>10</td>
<td>19.37</td>
<td>0.05</td>
<td>Group 2 is concentrated on the extremes while Group 3 is at the mean.</td>
</tr>
<tr>
<td>V-21 Total debt</td>
<td>8</td>
<td>384.225</td>
<td>0.01</td>
<td>Group 3 has more debts and larger debts; few or small debts for Group 2.</td>
</tr>
<tr>
<td>V-24 Income adequacy</td>
<td>5</td>
<td>214.664</td>
<td>0.01</td>
<td>Group 2 is heavily concentrated at inadequacy.</td>
</tr>
<tr>
<td>V-25 Will to move</td>
<td>2</td>
<td>200.976</td>
<td>0.01</td>
<td>Group 3 has many more potential movers.</td>
</tr>
<tr>
<td>Variable</td>
<td>Degrees of Freedom</td>
<td>Chi-square Value</td>
<td>Significance Level</td>
<td>General Relationship</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------</td>
<td>------------------</td>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>V-3 Access to cities</td>
<td>4</td>
<td>37.895</td>
<td>0.01</td>
<td>Group 5 has better access. Income and access directly related.</td>
</tr>
<tr>
<td>V-2 Population density</td>
<td>4</td>
<td>55.769</td>
<td>0.01</td>
<td>Group 5 is skewed towards densely populated areas.</td>
</tr>
<tr>
<td>V-7 Job satisfaction</td>
<td>9</td>
<td>25.411</td>
<td>0.01</td>
<td>Group 5 is generally more satisfied.</td>
</tr>
<tr>
<td>V-8 Age of head</td>
<td>9</td>
<td>41.295</td>
<td>0.01</td>
<td>Group 5 is concentrated in middle age classes; Group 4 has proportionately more at extremes.</td>
</tr>
<tr>
<td>V-9 Education of head</td>
<td>6</td>
<td>166.429</td>
<td>0.01</td>
<td>Group 5 is better educated.</td>
</tr>
<tr>
<td>V-14 Type of job</td>
<td>1</td>
<td>104.556</td>
<td>0.01</td>
<td>Group 5 has a large part-time farm group (high incidence of hobby farms).</td>
</tr>
<tr>
<td>Variable</td>
<td>Degrees of Freedom</td>
<td>Chi-square Value</td>
<td>Significance Level</td>
<td>General Relationship</td>
</tr>
<tr>
<td>----------</td>
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<td>------------------</td>
<td>--------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>V-24</td>
<td>4</td>
<td>63.775</td>
<td>0.01</td>
<td>Group 5's generally have adequate income.</td>
</tr>
<tr>
<td>Income adequacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V-25</td>
<td>2</td>
<td>13.174</td>
<td>0.01</td>
<td>Group 4 is more willing to move.</td>
</tr>
<tr>
<td>Will to move</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V-27</td>
<td>4</td>
<td>20.095</td>
<td>0.01</td>
<td>Group 5's will move for total package improvement; Group 4's basically for economic reasons.</td>
</tr>
<tr>
<td>Why move</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V-29</td>
<td>3</td>
<td>191.176</td>
<td>0.01</td>
<td>Group 4 has large number of houses in need of repair.</td>
</tr>
<tr>
<td>House condition</td>
<td></td>
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</tr>
</tbody>
</table>
Moving out the upper branch of Figure 5, the next comparison is between groups 12 and 13. Here, the basic test is on the effect of access to cities (Table 11).

The similarity of these two groups, with the exception of the three variables listed in Table 11, points out access to cities as a very important variable.

The next comparison is of groups 32 and 33 which are also on the upper branch of Figure 5. Here, income adequacy is the major question (Table 12).

Here, income adequacy seems to stem from absolute level of income with some indication of job type, aspiration level, and migration potential.

Groups 24 and 25 on the lower branch of Figure 5 are also splits on income adequacy (Table 13).

Income adequacy remains an absolute level question at this point though job and general satisfaction seem to be linked. This concludes the AID portion of the analysis.

**Summary of AID analysis**

The variables that have appeared significant in the AID analysis are the job type, total assets, educational attainment, number of wage earners, age of head of household, sex of head of household, the major wage earner, access to cities, and income adequacy. Each of these variables have characteristics of both cause and effect relationships and various interaction relationships. To better establish what these are, each variable will be examined in turn.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Degrees of Freedom</th>
<th>Chi-square Value</th>
<th>Significance Level</th>
<th>General Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-14</td>
<td>1</td>
<td>16.370</td>
<td>0.01</td>
<td>Group 12 was skewed to part-time farmers.</td>
</tr>
<tr>
<td>Job type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V-24</td>
<td>2</td>
<td>4.672</td>
<td>0.10</td>
<td>Fewer Group 12's found income adequate.</td>
</tr>
<tr>
<td>Income adequacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V-25</td>
<td>2</td>
<td>7.737</td>
<td>0.05</td>
<td>Fewer Group 12's willing to move.</td>
</tr>
<tr>
<td>Will to move.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 12

CHI-SQUARE COMPARISON OF GROUPS 32 AND 33

<table>
<thead>
<tr>
<th>Variable</th>
<th>Degrees of Freedom</th>
<th>Chi-square Value</th>
<th>Significance Level</th>
<th>General Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-14 Job type</td>
<td>1</td>
<td>69.160</td>
<td>0.01</td>
<td>Group 32 is heavily part-time farmers.</td>
</tr>
<tr>
<td>V-13 Number of jobs</td>
<td>4</td>
<td>7.927</td>
<td>0.10</td>
<td>Group 32 held more jobs.</td>
</tr>
<tr>
<td>V-25 Will to move</td>
<td>2</td>
<td>12.953</td>
<td>0.01</td>
<td>Group 32 is more willing to move.</td>
</tr>
<tr>
<td>Variable</td>
<td>Degrees of Freedom</td>
<td>Chi-square Value</td>
<td>Significance Level</td>
<td>General Relationship</td>
</tr>
<tr>
<td>----------</td>
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<td>----------------------</td>
</tr>
<tr>
<td>V-7 Job satisfaction</td>
<td>6</td>
<td>38.127</td>
<td>0.01</td>
<td>Group 24 is less satisfactorily employed. More would prefer a change.</td>
</tr>
<tr>
<td>V-14 Job type</td>
<td>1</td>
<td>5.650</td>
<td>0.02</td>
<td>Group 24 is skewed slightly to part-time farmers.</td>
</tr>
<tr>
<td>V-20 Total assets</td>
<td>5</td>
<td>19.569</td>
<td>0.01</td>
<td>Group 24 typically has fewer assets.</td>
</tr>
</tbody>
</table>
**Job Type.**—Income determination by job type formed a ranking from highest to lowest of: nonfarm only, farm plus nonfarm, farm only, and retired or unemployed. The first split of the AID Tree grouped the nonfarm only with farm plus nonfarm and farm only with retired or unemployed. The exclusion from the sample of farmers with over $10,000 gross sales leaves only small or marginal type farmers. The effect noted here is that the pure farmer group of the sample is a semi-retirement type who continue to farm in spite of advanced age for the lack of other meaningful alternatives or interest in trying anything else. Most have established a fair asset base in house and farm which, along with community attachment, affords security if not always adequacy.

The younger farmers who find their farms as inadequate sources of income have taken second jobs, but the more limited second job effort or perhaps lack of job opportunities leaves the total income from two jobs below the income for the holders of only nonfarm jobs. There is an interaction for the part-time farmers' income level and access to cities. The better the access in general, the higher the income indicating perhaps more and better job opportunities in larger cities.

**Total Assets.**—Total assets is a very interesting variable because it has shown up as both positive and negative relationships for income determination and as both a cause and an effect of income. High total assets are associated with farmers who have lower incomes, but they are also associated with persons owning nonfarm businesses.
and are here associated with higher incomes. These relationships are for capital assets and indicate a lower return on capital for the farms in the sample than for nonfarm businesses.

The other aspect of total assets is that the non-capital type of assets are associated with high income types who have accumulated capital through savings or from net income. So here, assets which were generally undefined, are an effect of income.

One last relationship noted was the very low asset base of non-farm retired persons although most of these do own their home.

Educational attainment.—The educational attainment level of the head of household is quite significant in income determination. Education and income are directly related in almost every group of the AID Tree. It was also noted that finishing eight years, finishing high school, or having a college degree were fairly critical. That is, below eight years, incomes were substantially smaller, but between eight and twelve, no great change; at twelve, there was another visible step, but it fell off until a college degree was secured.

There is a concentration of the below eight years of education types among the retired and full-time farmers which explains part of the lower income for these people, but even in the farm group and retired group, income was directly related to education.

There were also a few notable exceptions where very low educational attainment was associated with very high incomes, but these were individuals with large amounts of capital type assets. They had businesses and were generally self-employed.
It must be remembered that educational attainment is only a proxy for intellectual ability. However, more and more barriers are being built into the system which exclude the persons who have not formally attained given levels of education.

**Number of wage earners.**—The number of gainfully employed persons in a household is directly related to the household income as would be expected, however, the potential beyond two for most households is very limited; likewise, wives are often limited in their employment by family obligations.

The multi-earner families usually fall in the middle income bracket and younger to middle-aged groups. These are generally families where the wife has taken a job to supplement the family income. Few multi-earners were noted in the very high income groups. There was also a concentration of multi-earner households in the full-time farmer group where a son or daughter lived with the head.

The incomes of the multi-earner families were directly related to access to cities, again pointing up the additional job opportunities of living near cities for other members of the family than the head.

Along this same line, multi-job heads are related with lower incomes and income inadequacy. Inversely, to multi-earner families, multi-job cases are inversely related to income. Usually arising from the situation is that if the first job is inadequate so is the second and so on.
Age of the head of household. — The age of the head proved to be significant in that higher incomes were associated with the middle-aged categories while the extremes received lower incomes. The only major exceptions were the older aged groups with high educational attainment and those with nonfarm businesses. Such heads maintained high incomes.

As has been noted, a heavy concentration of the older persons is found in the pure farm and retired segments of the AID branch.

Sex of head of household. — In every case, female heads received lower incomes than did similar male heads. There is a heavy concentration of female heads in the older age brackets indicating widow types. The only female heads who received good incomes were those with college degrees. Those with good access to cities did better than those who were more isolated.

Major wage earner. — Following the pattern of the previous variable, male heads received the best incomes while female heads or wives of male heads and related individuals generally provided lower incomes. Most of this is related to the fact that non-male head major earners are concentrated in the upper branch of the AID Tree and isolated groups of female headed families so little additional information can be derived from this other than reaffirming the previous conclusions.

Access to cities. — Access to cities is assumed to be synonymous with access to job markets and alternative opportunities. This seems to be the case for all potential wage earners. Single job heads,
multi-job heads, and multi-earner families all indicate a direct relationship between income level and access to cities.

Income adequacy. — This is, without doubt, an effect of realized income although it is, in some cases, a cause of certain reactions. As was noted very early in this study, income adequacy is determined by many factors and persons at any level of income may consider their income inadequate, but certain characteristics can be noted.

The retired or farm job only group, represented in group 30 where there is a single core family, has 46 per cent who feel their income is inadequate at an average of $1,760, while at $2,596, income is considered adequate. In group 30, with a larger asset base, only 22 per cent think their income is inadequate at an average of $3,013 and adequacy is at $4,146.

The retired or pure farm group in group 35 usually has more than the core family and 38 per cent find income inadequate at $5,727 and adequacy is noted at $8,743. Group 34 is more distinctly retired heads and few additional members beyond the core family. Thirty-four per cent found income inadequate at $4,218 and at an income of $5,758, they felt income was adequate.

The other near retirement age group (16) contained 41 per cent who considered income inadequate at an average of $2,919. Adequacy was determined at $5,062. The lack of assets increases the income needs of this group and precludes retirement by necessitating larger cash flows than could be expected in retirement.
The relations and interactions that can be seen here are that single individuals or couples at retirement or near retirement with limited aspirations and owned homes (group 30) need a fairly low income, $2,596 average. The same type family group with higher historic life style demands a slightly higher income, group 31 with $4,146. When the household contains more than a basic family unit, group 35, the income deemed necessary jumps to $8,743 on an average. Group 34 is more heterogeneous than the above groups, but adequacy here is $5,758.

The nonfarm group (16) who are over 65, but still working is most similar to group 34 in composition and for income needs at $5,062.

Income adequacy is noted at two other splits in the lower branch of the AID Tree, step 12 and step 16. Groups 33 and 25 represent the adequacy income group at these splits with average incomes respectively of $8,599 and $8,809 while groups 32 and 24 represent the inadequate income groups with average incomes of $5,239 and $6,952, respectively. Beyond the job type and total assets, few differences could be discovered beyond basic dissatisfaction of the inadequate group versus basic satisfaction by the adequate group. This was demonstrated through the more willingness to move, general dislike of job, and multi-job heads.

In effect, there seems to be two income adequacy indexes, one for the retired or near retired and one for the more viable going family units.
There is one other general relationship that became evident in the AID analysis. That is the question of mobility. In general, two groups are mobile and two groups are not. The two groups who indicated mobility were some of the persons with above average incomes and education. They indicated they would move only for total improvement of life style and additional status. The second is a young striving group who found their incomes inadequate. They indicated they would move in many cases for economic reasons only and with fewer qualifications in all cases.

The two who are not mobile are the older groups and all of the upper branch (Figure 4) and the middle income groups who find their incomes adequate.

This concludes the AID analysis. At this point, the analysis will turn to the regression analysis segment.

Regression Analysis

As a complementary procedure to the AID technique, a regression analysis was performed on 19 variables that seemed to be explanatory of income variation. However, many of these did not hold up in the regression analysis or had such high levels of intercorrelation that they were eliminated. The model was stopped after nine variables had entered. Table 14 contains the variables which entered and their partial correlation values and regression coefficients.

The analysis generally supports the previous results of the AID program although some variables do not enter because of method
### TABLE 14
VARIABLES IN THE REGRESSION MODEL

<table>
<thead>
<tr>
<th>Variable</th>
<th>Partial Correlation Values at Step 1</th>
<th>Regression Coefficient</th>
<th>Entry Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex of head</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married male</td>
<td>.2150</td>
<td>(Dummy)</td>
<td>7</td>
</tr>
<tr>
<td>Single male</td>
<td>.1493</td>
<td>392.97</td>
<td>8</td>
</tr>
<tr>
<td>Single female</td>
<td>.2511</td>
<td>(Dummy)</td>
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limitations in regression analysis and the inability to isolate interaction. The entry order is slightly different with education and number of earners entering before type of job.

In this analysis, all the regression coefficient signs agree with what would be expected. For sex of the head, the married male had a positive sign while the unmarried male and female heads have negative signs. Access to cities carries a positive sign as does the satisfactorily employed group while the dissatisfied group has a negative sign. Age of the head has a negative sign pointing up the heavy influence of the retired group while education carries a positive sign. In job type, both the retired and farm only variables carry negative signs while the part-time farmers and nonfarm only groups have positive signs. Real estate value carries a negative sign due to heavy association with agriculture while total assets has a positive sign indicating an effect relationship with income as well as some causal relationship. Finally, number of wage earners has a positive sign.

The multiple coefficient of determination ($R^2$) is just slightly over .50 indicating that only about 50 per cent of income variation is explained by the variables as they are included here. However, the limited job classification system would probably afford much more information if it were more complete. Likewise, the crudeness of total assets without knowledge of the capital asset component versus consumption assets and the various types therein also limits explanation.
Access to cities is a proxy for access to employment markets, but there is a large variation between the job markets of various cities and regions that is not explained by the size and density of cities.
CHAPTER VI
SUMMARY

About these grave matters, I shall speak my mind frankly. This seems to me the right thing for an economist to do.

Gunnar Myrdal

This is the point where the bits and pieces are to be combined into a coherent and meaningful sum. It is also the point where an inventory of intent and results must be made. Finally, it is the point where the author is obliged to go out on the limb that he has built.

In order to do this, it seems logical to return to the premises, objectives, and general hypothesis of this study and to see how well they have fared.

Basic Premises Revisited

The first premise was that poverty existed in the study area in both the agricultural and non-agricultural sectors. This has been borne out in the analysis at any defined level of poverty. There is still a question of where the level should be established, but nearly every group created in the AID analysis contained some households that fell below the $3,000 standard.

The second premise that policies and programs have not been totally successful is self-evident from the first point. The question
of problem intensification cannot be substantiated in this study since the impact and a time series analysis of the programs is not included. However, the results of many other studies would bear out this conclusion.

The third premise that agriculture cannot provide sufficient opportunities nor assimilate surplus rural labor is indirectly supported by the income levels of farmers and the large part-time farmer segment. This is supported by many studies, but one which was conducted in the same area as this study suggested that in 1980, there should only be 28 per cent as many farms and only 25 per cent as much labor on them to achieve income efficiency.\footnote{Donald R. Kaldor and William E. Saupe, "Estimates and Projections of an Income Efficient Commercial Farm Industry in the North Central States," \textit{JFE}, Vol. 48, No. 3 (August, 1966), p. 592.} This certainly supports this premise.

The fourth premise that rural to urban migration is not a panacea is supported by numerous studies noted earlier both socially and economically, but more importantly by the limited interest among the sample in migration. While significant portions of some groups indicated interest, these were seldom the extremely poor and it must also be remembered that stated interest and actually doing it are two very different things.

The AID analysis certainly supports the premise that the rural poor is not a homogeneous group. In fact, the heterogeneous nature
of the rural poor partially precludes one of the objectives and general hypotheses of this study.

The sixth premise that the causes of poverty are both micro and macro in origin with a high degree of interaction is also supported by the analysis. The lack of opportunity in some areas and changing structure of agriculture are two examples of macro causation. While age, education, and physical handicaps are just a few of the micro causes, interaction can be seen in the case of rural education being less than perfectly relevant to the changing times by not equipping the rural youth appropriately.

Some identification of cause priorities has been made, but the critical levels of variables has remained more elusive. However, some support of the seventh premise is evident and some general values can be given.

The tailoring of programs to individual needs is definitely necessary, but at a slightly higher plane. That is, by generally homogeneous group needs. The needs of retired rural poor are definitely different than the needs of rural youth or young family groups.

The last premise that attention must be given to the macro climate is borne out by the variable access to cities and countless studies of the relationship of out migration from farms with general economic situation.

It seems that the premises from which the study took form have held up through the analysis although some are still largely dependent upon other studies and inferred relationships.
The General Hypotheses Revisited

The general hypotheses and objectives of the study are nearly parallel so only the hypotheses will be examined. The last objective to suggest viable alternatives for policy remains to be seen in the recommendations.

Hypothesis I

The first supporting hypothesis is that there are statistically significant and definable subgroups of poor people in the larger general class of rural poor. The variety of characteristics and the limits of isolating these through the use of realized income has somewhat limited the extent to which this hypothesis has been proved. However, several groups have been isolated generally making the hypothesis acceptable. The poverty groups that were isolated include:

1. a group of retired persons living in rural areas who had a limited asset base and found their situation very marginal (group 30);
2. a group of retired persons with a more substantial asset base who were in a better situation than the first group, but still many were at the margin (group 31);
3. a group of retirement aged farmers who were still trying to make a go at farming, but finding it unsatisfactory (groups 30, 31, 34, and 35);
4. a group of retirement aged heads who were dependent upon someone else in the family for most of their support causing some economic pressures on both the head and the major provider (group 35);
5. a group of retirement aged people who worked in non-agricultural jobs due to a lack of sufficient assets to stop; many were under pressure because of the increasingly limited job opportunities (group 16);

6. a group of households headed by females with a great deal of difficulty supporting themselves and their families (groups 26, 34, and 35);

7. a group of farmers of all ages trying to make a go of farming on non-commercial farms (groups 30, 31, 34, and 35);

8. a group of part-time farmers who had non-commercial size farms and who could not find adequate second jobs (groups 24 and 32);

and

9. a group of nonfarm heads who could not find jobs that would afford adequate income both single and multi-job holders (groups 24 and 32).

In these groups, the major variables are age of head, sex of head, assets, job type, job opportunities, and education. This leads directly to the second general hypothesis.

**Hypothesis II**

The second general hypothesis is that there are significant variables of causation in rural poverty. This hypothesis has been supported much more exactly. The variables that were found to be significant in the determination of poverty or non-poverty include:

1. educational attainment of the head;

2. the number of wage earners in the household;
3. the type of job;
4. the sex of the head of household;
5. access to cities;
6. the age of the head of household;
7. real estate value;
8. value of total assets; and
9. job satisfaction.

Tying the results of these two general supporting hypotheses together, it is very evident that age is a very important variable for five of the nine groups while the lack of asset stocks is seen in these same five groups; in some, precluding retirement and in others, limiting retirement satisfaction.

Limited total assets and real estate assets are important in the pure farm group and part-time farm group since it leaves them below economic viability. These same groups are subject to job opportunity limitations associated with accessibility of cities in that they can not find a second job or it is inadequate if available.

The accessibility of cities could be a determining factor for single earner households that have a potential second earner for the same reason as seen in the previous paragraph. The lack of jobs keeps the potential earner from entering the job market.

There is a heavy concentration of farmers in the poor groups described, but again the lack of other alternatives or limited alternatives for second jobs is very possibly the reason. Almost no
farmers indicated that they would not move because of their farms and, as is seen, many are in the non-agricultural job market.

Sex of the head is critical in one group and here the other variables of only one potential earner and definitely limited job opportunities for women come into play.

Limited educational attainment is noted in all of these groups and job dissatisfaction is heaviest among the potentially viable household types and female heads. The retirement group is generally only dissatisfied with their income levels.

The question is now what should be or can be done.

Alternatives and Recommendations

The two most commonly suggested solutions to rural poverty, or more narrowly farm sector poverty, is the transfer of labor out of agriculture or increased capitalization to achieve an economically viable scale operation.

The former concept implicitly calls for migration from rural areas to urban areas or explicitly, changing from an agricultural job to a non-agricultural job. This has been an important phenomenon historically for excess agriculture and rural labor, but the rising urban problems, deterioration of rural communities, and reluctance of many of the people still in the rural areas to move has negated this alternative as a solution.

The proposal to capitalize and achieve viable scale is generally attractive philosophically, but rather unrealistic in the face of
economic fact. For each farmer who could achieve viability in this manner, three must be sacrificed. Also, this proposal ignores the large number of nonfarm rural poor.

Both of these assume individuals have the necessary capabilities to carry out the necessary steps to move, find, and hold a new job or realize the capital assets and then manage them profitably. This assumption must be questioned in light of the analysis in this and other studies.

A long-term effort of human capital development is evident in education, but the quality and the relevance of rural schools have come under scrutiny and they have not always fared well. The real problem in the realm of education is what do these students do and where do they go once they are bits of human capital?

Recently or more appropriately once again, there is a strong thrust of community development or community resource development. There was a flurry in the 1930's aborted by World War II. Today, this movement has a greater chance of continuance, but it may be terribly inadequate. The idea is basically a self-help operation with substantial government aid for given projects, but the floundering rural community is still left to compete with cities, "chambers of commerce ideas," and tradition. In the long-run, such efforts may result in the same fate as efforts to make subsistence farmers viable.

The pessimism extended towards the above efforts is not meant to indicate impossibility of the situation, but rather to point up the
need for a radical and broad change of tactics. The proposals that follow are in sympathy to this point.

The recommendations and proposals here are directed at micro or macro problems. However, all have implications at both levels.

**Micro recommendations and proposals**

After family, the most important determinant of human development is education. Education has long been recognized as an important variable in economic success and this analysis is no different. It then follows that this is a subject that must be examined for alternative approaches.

At present, education is under fire from students, professional educators, employers, and parents. The basic reason for education is individual development along acceptable lines towards a meaningful end for both the individual and society.

Education is not doing the job it should and the fault is not easy to place, but large numbers of students are either physical dropouts or learning dropouts. To cure this, students must find something in the school for them and very early. The author's experience in secondary teaching is that the students are lost before they enter high school. So the first recommendation is a total re-evaluation of our formal educational system.

Adult education and continuing education are aspects of education that have gotten some attention and much discussion. The Federal Extension Service is an example of a very successful adult education program, but it has a limited and specific aim. There are
problems of structural unemployment and obsolescence in men just as in
machines. Beyond this, we are increasingly finding problems of alien­
ation and apathy.

To combat all of these problems, continuing education should be­
come a part of every rural community. The courses should not be lim­
itcd to vocational skills, but to any activity for which there is in­
terest, overt or covert. A large number of older persons have never
had a chance to do anything but work and at retirement, they are lost
with nothing to do. Life styles can be improved with any rewarding
activity whether economically rewarding or not. The real question of
economic value is utility, not dollars.

The crux is that the school should become a life center of the
community to be worn out, not left to stand well preserved but dusty.

A major program that might be called "Youth Investment" is a
more speculative idea. The central theme is to afford all youth an
opportunity at the beginning of their lives to acquire the human cap­
ital of education and the basic requirements of housing. This might
be thought of as a reverse social security, but instead of a social en­
dowment to maintain individuals after usefulness, it is a social in­
vestment in individuals to compound both individual and social value.

Here, each individual would be given the right to draw say
$10,000 for education or a business venture. If the choice is made
to draw on this fund, a percentage increase in his social security
taxes would be made proportionate to amount drawn. Second, each mar­
rried couple would be given a drawing right of say $15,000 for a basic
housing unit; again if this right is used, an increase in their social security taxes would be evoked. This same right could be extended to unmarried individuals at some given age.

The scope of this idea is enormous as are the possible variations, however, the potential simplicity plus the huge possible payoffs could make it more than interesting. The cost would, at first analysis, be staggering. A very crude estimate of the annual costs of the educational part of this proposal is between 10 and 20 billion dollars. The 20 billion level would be true if every youth between the ages of 18 and 25 took full advantage of the program. The lower figure seems realistic as an estimate when the number of participants and variations in costs and duration of different programs are considered.

There are approximately two million marriages a year in the United States. If all of these applied for and qualified for the housing privilege, the cost could run to 30 billion dollars, but if an age limit and exclusion of second and subsequent marriages are taken into account, the annual cost should drop to between 15 and 20 billion dollars.

These amounts are huge, but even a cursory examination of the Federal Budget turned up some five to eight billion dollars that are directed at these two problem areas and some 15 billion that are directly or indirectly used to combat either causes or effects that this proposal might eliminate. If the expenditure of state and local government were included, especially for educational support, the real
cost of the proposals might be very insignificant. The real cost, in fact, could be a real profit if all the long-run social and economic benefits could be computed.

This program would afford almost every couple a decent starting point and every youth the chance to go to college. It would also permit greater flexibility of college choice and, while the National Association of State Universities and Land Grant Colleges is opposed to this sort of idea, it would create greater competition among colleges and improve students' positions.65

It also avoids some of the problems noted with guaranteed income since this is merely a launching technique, not a sustaining and continuing source of sustenance.

Turning now to the opposite end of the age spectra, the retired and elderly in rural areas present a problem that only can be solved with time. They must be maintained at a sufficient level and should be encouraged to find meaningful activities and to stay interested, but many of these poor are purely welfare cases. The recent extension of social security to farmers and its increase in payments plus medicare should help solve this problem, but those outside these programs or those receiving too little must be helped. The most likely

solution seems to be inclusion of all poor people over 65 in these programs regardless of requirements and to establish a base that will give them sufficient incomes to live out their lives. From the analysis in this study, that base should be about $250 per month for a man and wife. This is above the stated needs of some and slightly below others, but if flexibility of unpunished supplemental income is given and with disability compensation, it should serve to meet their needs.

Another group that must receive special attention is the female headed households, especially where the woman has limited job skills. President Nixon's proposed program of family assistance will seemingly fill some of the voids for this group. However, along with this, there is a lack of child care centers in rural areas and urban areas, which precludes gainful employment by some potentially self-sufficient women. This is a community level job that could be incorporated into the school system.

It would seem from the analysis that the defined poverty level be established tentatively at $5,000 for a family of five and the non-poverty level be at $8,000 gross family income. For programs of negative income tax or guaranteed income, this should be the range of payment reductions for increased income for average families.

Lastly, income tax exemptions should be increased to $1,000 per dependent. This would equate the above $5,000 level with a family of five and it is much more realistic in the face of the costs of living than even the proposed $800 exemption in 1971.
Macro recommendations and proposals

The macro economic situation is an important determinant of the welfare of the lower income segment so attention must be given to insuring relatively full employment. The question of inflation and the impact has recently been shown to affect the low income or poverty groups less than proportionally, but the elasticity of unemployment is greater than one for the same group.66 Growth and development are also high priority goals, but this can be in quality as well as quantity. In this area, five general recommendations or proposals are advanced.

The first is concentration of welfare programs under a single agency and creating regional offices with information and assistance for all programs at a single physical point. The Federal Extension Service could still be used as a dissemination agent, but the Department of Agriculture is not the most desirable agency for the handling of poverty, welfare, and community development programs nor is the Labor Department or Department of Commerce, etc. The duplication and lack of awareness in multi-agency attacks on similar problems is costly and inefficient.

Paralleling this, better employment placement services should be established both at the federal and state levels. If jobs could be secured without leaving home, the process of moving would then be much easier and faced with less trauma.

The second proposal is to return all agricultural products to free market determination of supply and price. This would necessarily be gradual over a five or ten year period because an abrupt return to free market would place commercial farms in extreme price/cost squeezes. However, given time, they have the flexibility to make the necessary changes to remain viable.

The advantages here would be to make available monies now used in price support for other projects. Perhaps a decrease at the retail level in food prices, but this would no doubt be slight, and it would increase the push affect of labor and resources out of agriculture leaving the residual more viable and efficient.

The third proposal is to restructure our tax base and structure. The general direction would be to move to an almost exclusive income tax base collected by the federal and state government and decrease real estate taxes and sales taxes. Some present taxes such as gift, inheritance, luxury, and gasoline have specific goals that are not generally regressive and would continue, but with review.

The reasons for this change are the general efficiency of income tax collection, the automatic adjustment to both the individual income and for the economy, and the more painless nature of not missing what you never had. It would also give agriculture a better chance at profitability if the relatively heavy tax load were lifted from land. Retired house owner's positions would be improved if they were relieved of real estate and sales taxes. Land is no longer the prime
economic factor so it should not remain the prime tax base for communities.

Implicit in this is a tax sharing plan that would return a base per capita amount to each local governmental entity assuring some base standard. Likewise, a formula would be worked out for the differentials of service costs of various sizes and types of entities.

Some local taxes would be available in either local income tax or sales tax to provide the services the community wanted beyond the base, but not at the present level nor in the regressive mold of our present taxes.

Following the tax proposals is a regional government plan of an economic activity region. Today, many services and investments of social overhead capital should or must overlap two or more local governmental entities. To remove the fighting and competitiveness, representative regional governments with the power and the means to provide comprehensive regional planning of services and infrastructure are needed.

These regional governments would be the recipients of the tax sharing funds and seemingly the elimination of duplication, singular planning, and comprehensive systems of roads, welfare, health services, and so on would greatly improve the quality and costs of these things from the haphazard nature of our system today.

In this plan, education could remain in the hands of the community, but the board and administration should be required to attend
workshops, conferences, and other activities to assure their awareness of the trends, problems, and alternatives in education. Again, there would be a base school support on a per capita level from the state and federal governments with the option of the community to exceed this as much as they desire.

The last proposal is to create a national economic zoning code and board. In this, all areas might be classified into four or five economic area types. For illustration, the areas might be classified as:

Class I = An economic activity area with over 1,000,000 persons.

Class II = An economic activity area with between 500,000 and 1,000,000 persons.

Class III = An economic activity area with between 250,000 and 500,000 persons.

Class IV = An economic activity area with between 50,000 and 250,000 persons.

Class V = An economic area with less than 50,000 persons.

Here, plans for any new factories or installations by the top 500 firms (a variable) in the United States would be presented to the national zoning board which would be obligated to return in one month a class number of a region that would support such a proposed plant or installation. The firm is then obligated to locate the plant in such a region, but they have the choice of all such regions.

They could locate in a lower class region in which case I would propose some sort of tax relief for a period where they locate in areas classed lower than their zoned class. If they should become
involved in helping a lower class community with infrastructural development to support the firm, I would suggest even greater tax breaks say double the investment in infrastructure as tax write-off.

In this proposal, great variation is possible. For example, every third new installation might be exempt from zoning or only installations employing 50 or more persons or those valued at over $1,000,000 etc. This time is definitely here when even geographic development must be considered.

Along this same line, all new higher educational institutions and major additions should also be moved to regions classed as say III, IV, or V. The impact of a university in job creation, educational opportunity, cultural impact, and community interest is hard to estimate, but it is very large.

In Conclusion

Efforts to solve the problems of rural America and of poverty have too often been directed at the effects rather than the causes. The factors associated with economic success or failure, herein, are not different from the results of many other studies. However, this does reinforce the importance of these factors and the complexity of interactions as well as the diversity in rural America.

The final determinant of poverty elimination is individual. Individual on the part of the poor to take advantage of opportunities, to extend themselves for a break away, and to defy social pressures. Individual on the part of the non-poor, the legislators, and the
scientists to provide the opportunities, programs, and monies to eliminate poverty causes. The United States has the ability to do this; the only thing lacking is commitment.

The most efficient and economic means of poverty elimination is still a matter of conjecture, but it is time to act not hide behind never ending research. Radical proposals and alternatives are needed if only to stimulate controversy and thought. The traditional approaches are not tried and true, but rather tried and tired.

The political scene is most important in the war on poverty, but this is not restricted to the politics of government. Equally formidable stumbling blocks are present in the politics of professions; economics being one of them. National welfare and solution of problems must become the priority of social scientists rather than clique acclaim.
APPENDIX I

VARIABLES AND CLASS VALUES USED IN AUTOMATIC INTERACTION DETECTION PROGRAM

Number 1: Sex of head of household.

Class 1 = Male (with wife).
Class 3 = Male.
Class 4 = Female.

Number 2: Density of population (county).

Class 1 = 18-35 persons per square mile.
Class 2 = 36-67 persons per square mile.
Class 3 = 70-107 persons per square mile.
Class 4 = 137-258 persons per square mile.
Class 5 = Over 449 persons per square mile.

Number 3: Access of cities (from center of county).

Class 1 = (Bad) One or less within 60 miles radius.
Class 2 = (Poor) None within 40 mile radius.
Class 3 = (Fair) Several minor cities within 40 mile radius.

Class 4 = (Good) One SMSA and several minor cities within the 40 mile radius.

Class 5 = More than one SMSA near perimeter of 40 mile radius circle.

= Two SMSA's at opposite sides of the 40 mile radius.
Class 5 = (Excellent) Many cities well distributed over the 40 mile radius.

Number 4: Agricultural status (county)

Class 1 = Nearly all farms are very small or subsistence.

Class 2 = Small farms predominate, but some medium or large farms.

Class 3 = Large farms outnumber small farms.

Class 5 = Large farms outnumber small farms, but small farms are very small.

Class 6 = Large and very large farms almost exclusively.

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Number 5: Food Stamp Program in the county.

Class 1 = In operation by April 1, 1967.

Class 2 = Put in operation in April, 1967.

Class 3 = Put in operation in May or June, 1967.

Class 4 = Put in operation in July or August, 1967.

Class 5 = Put in operation in September to December, 1967.

Class 6 = Put in operation in first half of 1968.

Class 7 = Put in operation in second half of 1968.
Class 8 = Scheduled for 1969.
Class 9 = Not in operation or scheduled by March, 1969.

Number 6: Reason for nonavailability for work.
Class 0 = Unanswered.
Class 1 = Satisfactorily employed.
Class 2 = Needed at home.
Class 3 = Unable to work.
Class 4 = In school.
Class 5 = Retired or other reason.

Number 7: Job satisfaction.
Class 0 = Unemployed.
Class 1 = Like it and find it interesting.
Class 2 = Feel it is just another job.
Class 3 = Would like to change.
Class 4 = Likes it (secondary source).
Class 5 = Dislikes it (secondary source).
Class 7 = Error by enumerator.
Class 8 = No opinion.
Class 9 = Refused.

Number 8: Age of the head of household in years.
Class 0 = Less than 15.
Class 1 = 15 to 19.
Class 2 = 20 to 24.
Class 3 = 25 to 29.
Class 4 = 30 to 34.
Class 5 = 35 to 39.
Class 6 = 40 to 44.
Class 7 = 45 to 49.
Class 8 = 50 to 54.
Class 9 = 55 to 59.
Class 10 = 60 to 64.
Class 11 = 65 and over.

Number 9: Educational attainment of head of household.
Class 0 = Less than six years.
Class 1 = Six to seven years.
Class 2 = Eight to nine years.
Class 3 = Ten to 11 years.
Class 4 = 12 to 13 years.
Class 5 = 14 to 15 years.
Class 6 = 16 and over.

Number 10: Interest in special courses or education.
Class 0 = No interest.
Class 1 = Yes, interested.
Class 2 = Not applicable due to age or health.
Class 3 = Yes, if it doesn't interfere with present job.

Number 11: Does the head of household have a physical handicap?
Class 0 = No.
Class 1 = Yes.
Number 12: Travel from home to job in miles.

Class 0 = Less than five.
Class 1 = Five to nine.
Class 2 = Ten to 14.
Class 3 = 15 to 19.
Class 4 = 20 to 24.
Class 5 = 25 and more.

Number 13: Number of jobs held in 1966.

Class 0 = Zero.
Class 1 = One.
Class 2 = Two.
Class 3 = Three.
Class 4 = Four.
Class 5 = Five and more.

Number 14: Type of job held in 1966.

Class 1 = Retired, unemployed, and defective.
Class 2 = Nonfarm only.
Class 3 = Nonfarm plus farm.
Class 4 = Farm only.

Number 15: Value of real estate.

Class 0 = Less than $5,000.
Class 1 = $5,000 to $9,999.
Class 2 = $10,000 to $14,999.
Class 3 = $15,000 to $19,999.
Class 4 = $20,000 to $24,999.
Class 5 = $25,000 to $29,999.
Class 6 = $30,000 to $34,999.
Class 7 = $35,000 to $39,999.
Class 8 = $40,000 to $44,999.
Class 9 = $45,000 to $49,999.
Class 10 = $50,000 and over.

Number 16: Tenure status of house.
Class 0 = No information.
Class 1 = Fully owned.
Class 2 = Partially owned.
Class 3 = Rented.
Class 4 = Part of job (no rent).
Class 5 = Part of farm rent.
Class 6 = Rent free.

Number 17: Number of wage earners in household.
Class 0 = Zero.
Class 1 = One.
Class 2 = Two.
Class 3 = Three.
Class 4 = Four.
Class 5 = Five and more.

Number 18: Major earner.
Class 1 = Unattached individual with no income.
Class 2 = Unattached individual with income.
Class 3 = Head of household.
Class 4 = Male head without wife.
Class 5 = Female head without husband.
Class 6 = Some other relative of head.

Number 19: Value of life insurance.
Class 0 = Less than $2,500.
Class 1 = $2,500 to $4,999.
Class 2 = $5,000 to $7,499.
Class 3 = $7,500 to $9,999.
Class 4 = $10,000 to $12,499.
Class 5 = $12,500 to $14,999.
Class 6 = $15,000 to $17,499.
Class 7 = $17,500 to $19,999.
Class 8 = $20,000 to $22,499.
Class 9 = $22,500 to $24,999.
Class 10 = $25,000 and over.

Number 20: Value of total assets.
Class 0 = Less than $5,000.
Class 1 = $5,000 to $9,999.
Class 2 = $10,000 to $14,999.
Class 3 = $15,000 to $19,999.
Class 4 = $20,000 to $24,999.
Class 5 = $25,000 to $29,999.
Class 6 = $30,000 to $34,999.
Class 7 = $35,000 to $39,999.
Class 8 = $40,000 to $44,999.
Class 9 = $45,000 to $49,999.
Class 10 = $50,000 or over.

Number 21: Total value of debts.
Class 0 = Less than $250.
Class 1 = $250 to $499.
Class 3 = $500 to $999.
Class 4 = $1,000 to $2,499.
Class 5 = $2,500 to $4,999.
Class 6 = $5,000 to $7,499.
Class 7 = $7,500 to $9,999.
Class 8 = $10,000 or over.

Class 0 = Less than $1,000.
Class 1 = $1,000 to $1,999.
Class 2 = $2,000 to $2,999.
Class 3 = $3,000 to $3,999.
Class 4 = $4,000 to $4,999.
Class 5 = $5,000 or over.

Number 23: Family size.
Class 0 = Less than two.
Class 1 = Two to three.
Class 2 = Four to five.
Class 3 = Six to seven.
Class 4 = Eight to nine.
Class 5 = Ten or over.

Number 24: Is your income adequate?
Class 0 = Yes.
Class 1 = Yes (secondary source).
Class 2 = No.
Class 3 = No (secondary source).
Class 4 = Defective.
Class 5 = Refused.

Number 25: Is head willing to move?
Class 0 = Defective.
Class 1 = Yes.
Class 2 = No.

Number 26: Why head isn't willing to move.
Class 0 = Doesn't apply (will).
Class 1 = Too old.
Class 2 = Family reasons.
Class 3 = Satisfied.
Class 4 = Doesn't want to give up farm.
Class 5 = Doesn't want to give up house.
Class 6 = In school.
Class 7 = Costs too much.

Number 27: Why head would move.
Class 0 = Doesn't apply (won't).
Class 1 = Unqualified if live as well.
Class 2 = Same income, but better community.
Class 3 = Better income and community.
Class 4 = Better job and more status.
Class 5 = Other.

Number 28: Number rooms in house.
Class 0 = Less than two.
Class 1 = Two to three.
Class 2 = Four to five.
Class 3 = Six to seven.
Class 4 = Eight to nine.
Class 5 = Ten and over.

Number 29: Condition of house.
Class 0 = Good, no improvements needed.
Class 1 = Needs repair or improvements.
Class 2 = Defective.
Class 3 = Unanswered.
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