Reflections on Poverty Within Agriculture
Author(s): Theodore W. Schultz
Source: *The Journal of Political Economy*, Vol. 58, No. 1 (Feb., 1950), pp. 1-15
Published by: The University of Chicago Press
Stable URL: http://www.jstor.org/stable/1826195
Accessed: 05/01/2011 03:21

THE JOURNAL OF
POLITICAL ECONOMY

Volume LVIII FEBRUARY 1950 Number 1

REFLECTIONS ON POVERTY WITHIN AGRICULTURE[1]

THEODORE W. SCHULTZ
University of Chicago

There is room for a lament on the state of ideas held and cherished with regard to poverty within agriculture. There is the widely held belief of farm people, many of whom are well up the income ladder, and of their leaders that poverty is basically not a concern of the public but of the farm family that is poor. Thus by-passing the issue, agricultural policy is left free to concentrate on the economic problems of farmers who are substantially above the poverty rung. The chronic problem of poverty of long standing in many parts of agriculture is viewed by many as being mainly a private and personal affair of the families who are poor and as having no social roots or major social implications. There is also the belief, now firmly established among many industrial-urban people, that most farm people are poor most of the time. The lament becomes deep and mournful when one sees the formation of agricultural policy proceed as if all farm families were poor and when one observes the failure of agricultural programs to come to grips with the poverty that actually exists within American agriculture.

Poverty—the state of being in need—is an acceptable state socially; the poor have always been with us (and, of course, respectable, for it is not an unknown academic state!). It is neglected in research about agriculture, since thinking on this issue is usually not received with favor; and it is ill conceived in the formulation of agricultural policy and misused in seeking public support for agricultural programs. Poverty within agriculture is acceptable, for it is looked upon as natural. It is natural (1) because poor farmers gravitate to poor land, and there is much poor land in the United States; (2) because many farm people prefer to stay poor rather than make adequate effort to improve their lot; (3) because in farming, although people may be poor in dollars, they are nevertheless rich in those valuable appurtenances that go with being close to nature and with the free independent living of farm life; and

[1] This paper was prepared for, and presented at, the meetings of the American Farm Economics Association, held at Laramie, Wyoming, August 17–20, 1949.

(4) because the Negro and the Mexican, of whom there are many in agriculture, are naturally poor. So run the mythology and folklore of our day, making poverty not only acceptable but necessary.

The neglect of the study of poverty within agriculture is understandable because the poor in agriculture are politically impotent. Although political influence may gradually come to them, such influence is still in the distant future; and those who administer research are necessarily sensitive to the immediate political repercussions of such research. If they were inclined otherwise, they would do well to look back and reflect on the fate that befell the rural sociologists, on the fire that was directed against the Bureau of Agricultural Economics, and on the frigidity of Congress toward proposals to help the poor in agriculture no longer ago than the early forties. But this neglect runs deeper, for those who do research are not prone passively to accept political coercion curtailing their freedom of thought when they feel strongly on the issues at stake. The inference is that they do not believe that poverty in agriculture is an important social problem. This belief may exist because, for the most part, agricultural research workers have been trained in an intellectual climate that gives little emphasis to the strong, liberal, and humanitarian currents that have characterized our Western culture; because their research problems have not brought them into close contact with the poor in farming; and, probably most important of all, because they have been inclined to accept the prevailing folklore about poverty in agriculture. Thus, since thinking and ideas must precede social action to diminish poverty, it should surprise no one that the formation of policy with regard to poverty is ill conceived and misapplied.

I. PRELIMINARY CONSIDERATIONS

To analyze the economic aspects of the poverty that has gradually become imbedded in agriculture, it is necessary to have some conception of economic development. The classical economists had a theory of economic growth and progress, which, however, as I shall show, does not have sufficient generality to deal with the type of economic development that has come to characterize the history of the United States. The task at hand consists of three parts. The first entails an attempt to describe the salient characteristics of the poverty that has emerged. This characterization is presented in the form of a series of propositions. Next, there is the task of selecting an analytical framework sufficiently comprehensive to include conditions under which economic progress can give rise to increasing disparity of income. And, finally, there is the difficult undertaking of determining the conditions that are necessary for increasing disparity in income to occur. It is my belief that the results of this approach are meaningful in the formation of policies to diminish poverty in American agriculture. The policy implications, however, are left for another occasion.

In this paper I take the American scene as it has developed during the comparatively few decades that have elapsed since the settlement of this continent as the empirical setting of the problem. I neglect, for the most part, the effects of sudden changes in the main economic magnitudes of either world war or of the great depression. Accordingly, in order to make my task manageable, I abstract from short-run fluctuations in the basic argument. I take poverty to mean being too poor to afford the level of living[2] that

[2] The concept of "level of living" refers to the possession of goods, services, and opportunities. It consists in what people have, that is, the opportuni-

has become generally established and that most people can afford. I am not, however, concerned with the poverty of any particular farm family but, instead, with that of an aggregate consisting of all the families located in a given community or neighborhood.[3] More specifically, whenever I refer to "level of living" or to "income," I mean the average level of living or the per capita income of the community. Accordingly, this study does not focus upon isolated farm families, no matter how poverty-stricken they may be, but upon a group of families comprising a community or neighborhood. Thus in any given community one or more families may be beset by poverty as compared to the average level of living of the community. This *within*-community poverty is not, however, the object of this study. The analysis is restricted to *between*-community comparisons. It follows, therefore, that not all the families in a poor community are necessarily equally poor and that some families in such a community may be better off than are many families located in a comparatively rich community.

In order to simplify the problem, let me treat one of the empirical propositions as an assumption at this point. Let it be assumed that these communities had about the same distribution in wealth and natural endowments at the time of settlement or at the time that the developments associated with the industrial revolution began to make their impact. This means that within a community some families had more than average talents while others fell below that mark; for, even at the outset of settlement, it is only reasonable to suppose that some families were poorer than others both in natural endowments and in material possessions, including the "investment" that had already been made in themselves in ways that enhanced their productive capacity. I take it to be a rough approximation of the facts that the distribution of "talents" and "capital" within most, if not all, communities at the time of settlement or at the time that industrialization began to make itself felt was probably not significantly different from one community

---

ties available to them and the goods and services that they use and consume. For the distinction between "level of living" and "standard of living" see Carl C. Taylor *et al.*, *Rural Life in the United States* (New York: Alfred A. Knopf, 1949), chap. xvii.

Margaret Jarman Hagood, of the Bureau of Agricultural Economics, has made a number of studies concentrating on the level of living of farm people. Her study, *Farm Operator Family Level of Living Indexes for Counties of the United States 1940 and 1945* (May, 1947), is exceedingly instructive. With the United States county average for 1945 equal to 100, one finds that her indexes of the level of living for the ten lowest counties in Kentucky range from 5 to 16, as follows:

1945 LEVEL OF LIVING

Counties	Index (10 Lowest Counties in Kentucky)
Breathitt	5
Leslie	6
Elliott	9
Knott	12
Owsley	13
Magoffin	13
Clay	14
Lawrence	15
Lee	15
Knox	16

Her data for the ten highest counties in Iowa show indexes ranging from 188 to 196, as follows:

1945 LEVEL OF LIVING

Counties	Index (10 Highest Counties in Iowa)
Ida	188
Buena Vista	189
Hamilton	189
Cherokee	190
Marshall	190
Wright	191
O'Brien	192
Sac	192
Benton	194
Grundy	196

[3] I am inclined to follow fairly closely the idea of a community (or neighborhood) as it is set forth in Taylor *et al.*, *op. cit.*, chap. iv. For most of the conditions under consideration, the rural neighborhood can be used instead of the community. Accordingly, I shall use the two terms "neighborhood" and "community" as being quite interchangeable.

to another. Meanwhile, they have moved far apart in income, and therefore, on that score, the distributions of families have come to differ greatly. Whether, however, a similar drift has occurred in the case of the endowments of people within communities is a disputed point. Although the evidence is tenuous, it may be held that, whereas there are now poor and rich communities in agriculture, they are still essentially more alike than they are unlike one another, in the distribution of natural human endowments.[4]

II. SIMPLIFYING EMPIRICAL PROPOSITIONS

The propositions that follow are intended to direct attention to certain salient characteristics of our economic development. They are an attempt to describe one of the economic aspects of that development, namely, the differences between communities in the rates of growth or of progress, expressed in terms of per capita income or level of living. To isolate this aspect, it is necessary to simplify greatly and, in the process, to leave aside many other historical facts and issues. Nor is it my belief that no qualifications are required along the way. These propositions may be stated as follows:

1. In general, the differences in per capita income and level of living among communities were not so great at the time when people pioneered new areas or at the time industrialization began as they have become since then.[5] Poverty of whole communities did not generally exist under pioneering conditions because levels of living were in their essentials quite similar, although, if we look back, people were undoubtedly exceedingly poor by present-day standards.

2. The marked differences in level of living that have emerged within agriculture are not mainly the result of a deterioration on the part of those communities in which people are now living under conditions of poverty but largely the consequences of the increases in per capita incomes that have been realized by people in other communities.[6] This proposition means that families in some localities have been virtually stationary in their level of living. Others have advanced somewhat in their level of living, and still others have shown marked advances. The gap between the first and third types of community has become exceedingly wide, is becoming ever wider, and will continue to increase as

[4] Dorothy S. Thomas, in reviewing the research that has been done on selective migration, finds that four conflicting hypotheses have emerged as to the direction of this selection and its effects upon rural areas:

"1. City migrants are selected from the superior elements of the parent population;
2. Cityward migrants are selected from the inferior elements;
3. Cityward migrants are selected from the extremes, i.e., both the superior and the inferior elements; and
4. Cityward migration represents a random selection of the parent population."

Professor Thomas concludes that there is some evidence to support each of these hypotheses. Although the evidence is tenuous, it is nonetheless probable that "selection does operate positively, negatively, and randomly, at different times, depending on a variety of factors that, up to the present, have not been adequately investigated" (see "Selective Migration," *Milbank Memorial Fund Quarterly*, XVI, No. 4 [October, 1948], 403–7).

[5] Chester W. Wright, *Economic History of the United States* (New York: McGraw-Hill Book Co., 1941), discusses the agriculture of the late Colonial period in these words: "The outstanding feature that characterized colonial agriculture was the fact that the greater portion of the products raised was for the family's own consumption. This was typically the situation except in the regions such as the southern plantations where . . . [tobacco, rice, indigo] dominated" (p. 89). For an account of the level of living about 1770, covering housing, food, clothing, and medical care, see pp. 1010–22.

[6] A cogent study of this point is that of Mandel Sherman and Thomas R. Henry, *Hollow Folk* (New York: Thomas Y. Crowell Co., 1933).

long as the first type remains stationary or advances less rapidly than does the third.

3. These gaps, consisting of differences in level of living, are basically consequences of the way in which the economy of the United States has developed and not primarily the results of any original differences in the cultural values or capabilities of the people themselves.

Each of these propositions is meaningful in the sense that it is possible, by making an appeal to empirical experience, to determine whether each is a valid statement about economic history. Actually, the first two are not essential to the argument proper; for they merely specify a particular set of conditions at the beginning of settlement and outline the changes that have occurred in the relative positions of neighborhoods since that time. It is the third of these that is central and most important to the argument, as may be seen when it is stated as follows: The differences in the per capita income and the level of living that have come to exist *among* neighborhoods in agriculture are basically the consequences of the way in which the economy of the United States has developed. The principal difficulty that arises in putting this statement to the test is largely in specifying the components that go to make up the way in which the economy has developed and in determining their effects upon the local fortunes of people. Before undertaking this task, however, it should be possible to clear away some underbrush by calling attention to several fairly obvious implications of this formulation of the problem of poverty in agriculture.

If poverty as herein defined is the result of economic development, it cannot be a consequence of the differences in the physical characteristics of land unless it can be shown that the differences in land per se are a significant factor in that development. It will become evident as I proceed that there are strong reasons for believing that the differences in land suitable for farming, in themselves, have not been an important factor in shaping the course of our economic development. The industrial "Ruhr" of the United States developed across the middle states to the north not because the farm land of the Corn Belt was better than that of the Cotton Belt generally, but for quite other reasons. The main effect has been the other way around, that is, the economy, essentially as an independent variable, has developed in such a way as to give some farm land a comparative advantage over other land in potential adjustments to economic progress. This statement means that people who settled on poor land located in or near the main stream of economic development have benefited from the economic progress growing out of that development as much as have people situated on highly productive land in or near this stream. On the other hand, people who settled on good land that was located away from the centers of active development, and thus at a disadvantage in terms of making the necessary social and economic adjustments, lost ground relative to those people who settled on either poor or good land located in or near the main stream. The term "disadvantage" in this context is not a matter of physical distances and therefore cannot be measured in miles. It must be expressed in terms of adverse effects upon efficiency and capacity of the entry and exodus of resources that can be transferred, especially of the human agent. The milk sheds are a case in point that firmly support these remarks regarding the role of farm land. The milk sheds are the closest of all farm land to the active centers of the main stream of economic development because of the overwhelming importance of the industrial-urban sectors in generating economic progress. The differences in the physical characteristics of land among major milk sheds is exceedingly great, some of it consisting of rough, hilly, poor land by any standards and some of level, highly fertile land. Yet nowhere within a milk shed, attached to a major industrial-urban area, can it be said that there exist whole communities of poverty-stricken farmers, as is the case in large parts of American agriculture located at a disadvantage relative to such areas.

The main import of these remarks on land is simply that studies concentrating on land may describe the location of poverty but cannot analyze its underlying causes, inasmuch as land is essentially passive in the process that has brought about the poverty under consideration.

Another implication of the argument set forth above pertains to the drift of prices. It may be stated thus: If poverty is the result of economic development and if this development is not incompatible with changes in the level of particular prices, the long-run decline (or rise) of a farm-product price is not necessarily a factor contributing to the poverty that has come to exist among communities in agriculture. Product upon product may be cited in which, over the years, the price has declined relative to other prices and the industry producing the product has prospered, in that it has attracted additional capital and labor into its productive effort. On the other hand, there are many cases in which a decline in price has necessitated less output, and the adjustment has been made without generating poverty. It can, therefore, be demonstrated both in theory and in practice that a decline in price is not incompatible with economic development; in fact, on the contrary, it has usually been an essential part of the process. This is not to argue that prices that fluctuate greatly are as efficient in guiding production as are steadier and more dependable prices.[7] Nor do I wish to imply that contraction is necessarily easy—certainly not in the short run. An appeal may be made to certain obvious empirical observations with regard to agriculture. Take any major farm product, and, regardless of whether the price has declined or risen over the years relative to other farm products, there are farmers—in fact, whole communities of farm families—who are distinctly well-to-do and who are mainly dependent for their income on that product. The view that I am advancing is simply that long-run price flexibility has not brought about the kind of poverty that is under consideration in this paper. It has, of course, enhanced greatly the efficiency and the size of the national product.

III. ECONOMIC PROGRESS CAN BRING ABOUT INCREASING DISPARITY IN INCOME

Progress that increases income may be viewed either in the aggregate or in per capita terms. The argument on which this paper rests presupposes an economy in which both are increasing and in which the per capita income in some communities seems to remain virtually stationary while that of others increases, although the rates of increase may vary. To gain perspective, it may be helpful to look afresh at the classical conception of economic progress. The older economists

[7] The effects of variations in prices (in terms of the economic uncertainty that these impose upon farmers) on the production plans of farmers is the central subject of my article, "Spot and Future Prices as Production Guides," *American Economic Review, Papers and Proceedings*, XXXIX (May, 1949), 135–49.

—Ricardo, Malthus, Mill—conceived of "the dynamics of political economy"[8] as a process in which the aggregate income increases under circumstances where per capita income tends to remain constant. Their analytical apparatus was built around the rates of change of two important magnitudes; they were inclined to call one of these the "power of production" and the other the "power of population."[9] Various rates of increases in production were considered, but, under their assumption, it did not matter whether production moved forward gradually or took a sudden spurt, since extra population soon took up the slack. Their theory in its main outlines is simple and remains powerful. Whenever conditions are such that the growth in population absorbs any increase in production to the point that per capita incomes tend to remain constant, it necessarily follows that the power of production becomes the limitational factor not only of the size of the population but also of economic progress expressed in terms of increases in aggregate income. The conditions on which this classical conception of dynamics rests are no longer generally applicable, but as a special case they continue to apply to much, perhaps even to most, of the world. And, where they do apply, a great deal of insight can be had by the use of this apparatus.

We need, however, a formulation with greater generality; for it is clear that, when the concept of economic progress is restricted to an increase in aggregate income with per capita income remaining constant, it is conceived altogether too narrowly. The following statement is proposed: Economic progress consists of an increase in aggregate income with changes in per capita income unspecified, except that no community becomes worse off. Actually, the most important part of this undertaking is to specify and identify the conditions that are necessary in economic progress, that generate disparity in per capita incomes, and that perpetuate these inequalities functionally considered, once they have become established.

A few observations on the economic developments that have characterized the industrial revolution of western Europe suggest that there is a close parallelism between those developments and the central propositions underlying the main argument of this paper regarding poverty in American agriculture. There is no firm basis for believing that the level of living that existed in most of the communities (or neighborhoods) comprising the bulk of the population of western Europe prior to the events associated with the industrial revolution were as different one from another as they have become since then.[10] The level

[8] This is John Stuart Mill's phrase in opening Book IV, "Influence of the Progress of Society on Production and Distribution," of his *Principles of Political Economy*.

[9] Best expressed in David Ricardo's *The Principles of Political Economy and Taxation* ("Everyman's Library" ed.), chap. v.

[10] In *Review of Economic Progress*, Vol. I, No. 4 (April, 1949), Colin Clark presents data that permit the following comparisons among countries in terms of levels of real national product per man-hour, showing the period when they reached a specified level (in international units).

At 0.03	0.10–0.15	At about 0.30
France before 1800	Britain before 1800 (0.14)	Britain, 1890 (0.31)
Germany before 1800	France, 1850 (.10)	U.S.A., 1890 (.34)
India by 1860	Sweden, 1860 (.10)	Denmark, 1913 (.30)
Japan by 1890	Greece, 1880 (.13)	Germany, 1913 (.31)
China by 1930	Eire, 1880 (.11)	Netherlands, 1913 (.29)
	Belgium, 1890 (.11)	Norway, 1920 (.33)
	Italy, 1890 (.10)	Spain, 1920 (.31)
	Norway, 1890 (.14)	Sweden, 1920 (.30)
	Switzerland, 1890 (.15)	France, 1924 (.30)
	U.S.S.R., 1900 (.15)	Switzerland, 1925 (.31)
	Estonia, 1913 (.11)	Eire, 1926 (.30)
	Hungary, 1913 (.14)	Belgium, 1930 (.33)
	Portugal, 1913 (.11)	Argentina, 1935 (.35)
	Japan, 1922 (.10)	Finland, 1937 (0.32)
	Turkey, 1927 (.10)	
	Ecuador, 1940 (.11)	
	Brazil, 1946 (0.11)	

of living of the mass of the people was obviously very low everywhere compared to levels that emerged subsequently, if we neglect the courts and a few of the trading towns. The levels of living were, with few exceptions, low in virtually all communities and did not differ nearly so much from one community to another as they do at present. The way in which the economy developed by increasing overall production is noteworthy. The per capita income and level of living began to rise in the countries experiencing the increases in production. One should note also that, instead of a migration of people from other parts of the world toward these countries, attracted by the rising per capita incomes and levels of living, there occurred, in fact, an extraordinary migration out of western Europe not only to the United States but to Asia and to other countries overseas.[11] Was it the poor, the people in the communities that were being by-passed by the industrial revolution, who migrated abroad; and did they do so because they found it easier to go abroad than to participate in the growing fortunes of people generally in communities benefiting from economic progress?

This brief reference to the economic history of western Europe since about 1650 suggests that the advances in technology and in economic organization usually ascribed to the industrial revolution, gave rise (1) to a much larger aggregate production; (2) to an increase in per capita income and in level of living generally in Europe, despite the fact that the European population has multiplied five times from 1650 to date;[12] (3) to an increasing disparity in per capita incomes and in levels of living between western Europe (certainly up to World War II) and those parts of the world that had not benefited from the process of industrialization;[13] and (4) to conditions which impeded the migration of non-Europeans into Europe, a development that would have equalized returns to human agents of European and non-European communities had it occurred in sufficient numbers. But what actually happened was a migration of millions of Europeans to other parts of the world.

IV. CONDITIONS NECESSARY FOR INCREASING DISPARITY IN INCOME

There can be no doubt that the economic progress that has characterized the industrial development of the Western world, including our own, has brought about a disparity in incomes. One observes that the disparity in per capita incomes between the advanced and the undeveloped industrial countries has become ever greater; and also, within a country like the United States, communities at or near centers of economic progress have pulled further and further away in terms of productivity and income per head from those communities situated less favorably.[14] I shall endeavor

[11] Dudley Kirk in his book, *Europe's Population in the Interwar Years* (Geneva: League of Nations, 1946), chap. iii, puts the migration out of Europe as follows: "The number of Europeans living outside of Europe was negligible in 1650; it has been estimated that since that time some 60 million Europeans have sought homes overseas. . . . Millions more crossed the low barriers of the Urals to settle in Siberia and the Interior of Asia."

[12] *Ibid.*, p. 17.

[13] The increasing disparity in income per head is documented by a wealth of data brought together by Colin Clark, *The Conditions of Economic Progress* (New York: Macmillan Co., 1940), esp. chap. iv. In my paper, "Food, Agriculture, and Trade," *Journal of Farm Economics*, XXIX (1947), 7, I drew upon Clark to show how rapidly this disparity had occurred since about 1870.

[14] It may be of interest to note that, taking Colin Clark's figures appearing in *Review of Economic*

to indicate the conditions responsible for the increasing disparity in incomes.

The accumulation of capital that is put to productive uses will, of course, other things being equal, increase the income of those who are the recipients of such earnings. The concentration of productive assets in the hands of people of advanced industrial countries is a commonplace; the unequal distribution of such assets among families within a country is also well known. This aspect of the growth of capital and its effects on the distribution of income is certainly not new. Nor has it been neglected in economics. In the formation of policy for agriculture, however, sight is often lost of the fact that many farm families possess valuable property that earns for them very considerable income and that such families are not necessarily poor even when farm prices are low.

Abstracting from changes in income contributed by the growth of capital other than that "invested" in the human agent, there are three sets of conditions inherent in economic progress, each of which can bring about a disparity in income. A disparity will occur in favor of people in communities located at or near the centers of economic progress under each of the following conditions: (1) those that alter the proportion of the population engaged in productive work in one community relative to that of another; (2) those that change the abilities of a population to produce, of one community relative to that of another; and (3) those that impede factor-price equalization of comparable human agents between communities.

1. CONDITIONS DETERMINING THE PROPORTION OF A POPULATION THAT CONTRIBUTES TO INCOME

The ratio of contributors to noncontributors becomes larger as communities participate in economic progress. Obviously, this ratio is important; for, if only a few people are active at productive work, there will be less income per head than if many people in a given community are contributors, other things being equal. The conditions that determine this ratio arise out of a number of complex developments; there are (1) the changes in composition of the population associated with economic progress, (2) the changes in the continuity of employment and in the specialization permitted by the division of labor that emerge as a result of economic developments, and (3) differences that arise from the way in which income is measured and in which the income accounting is done.[15]

Probably the most important of these developments is the demographic evolution of the population of a community. Students of population have observed that there are, from a demographic point of view, basically three population types

Progress, Vol. I, No. 4, and assuming that his \$0.03 per hour (in terms of his international unit) is the lowest level of real national product per man-hour, we get the following spread between the low and the high countries:

Year	No. of Times Highest Country Is above Lowest
Before 1800	5
1800–1825	7
1910	17
1930	25
1940	33
1947	39

The last figure, that for 1947, is obtained by assuming that China has not risen above the \$0.03 reported for 1930 and relating it to the \$1.19 reported for the United States. That the level-of-living index of farm operators in the United States in 1945 should also show Grundy County, Iowa, thirty-nine times as high as Breathitt County, Kentucky (see n. 1) is a similarity that should not be dismissed too lightly.

[15] I will not elaborate the third in this paper because it would take me somewhat afield and because it would require an entire paper to do it satisfactorily.

in the world at present.[16] The first of these is the *pre-industrial type*, with very high birth and death rates, with a large proportion of the population in the lower-age brackets of the population pyramid, and with a short life-expectancy. It fulfils the essential conditions of the Malthus-Ricardo-Mill idea of dynamics, inasmuch as the potential increase in population is such that it can readily absorb substantial increases in production should they occur and thus tends to keep the level of living constant. The basic consideration in this context, however, is the fact that a large proportion of the population consists of nonproducers. The second type of population is usually referred to as *transitional*, with its diminishing birth and death rates but with the death rate dropping first[17] and for a time faster than the birth rate, with a marked increase in population taking place as a consequence. The advanced *industrial type* comes into existence when the birth and death rates are again approaching a balance at rates about one-third to one-half as high as those that characterize the pre-industrial populations. Life-expectancy becomes fully twice as high, and the age distribution characterizing the population pyramid is such that a large proportion of the people are in the ages where they can contribute to productive economic effort.

We are inclined to think of the United States as approaching a demographic stage characteristic of an advanced industrial country, but it is true that within agriculture the pre-industrial and the transitional demographic population types predominate. Moreover, one of the major consequences of these demographic differences is to be found in the proportion of the farm population that can contribute to production. For example, in comparing Grundy County, Iowa, with Breathitt County, Kentucky, we find that, in 1940, 62 per cent of the farm population of the Iowa County was twenty-one years of age and over, as against 42 per cent of the Kentucky county.[18] The farm population seventy years of age and over in both cases was slightly more than 2 per cent.

A second development altering the proportion of the population that contributes to income arises out of changes in the continuity of employment and the specialization afforded by the division of labor as economic progress has proceeded. Again, it may be assumed that, until industrialization got under way, most communities were essentially alike in this respect; but they have drifted apart because some communities in agriculture have emerged with more continuous employment and with work more specialized than have the communities

[16] An excellent essay on this subject is that of Frank W. Notestein, "Population—the Long View," in *Food for the World*, ed. Theodore W. Schultz (Chicago: University of Chicago Press, 1945); see also Warren Thompson, *Population and Peace in the Pacific* (Chicago: University of Chicago Press, 1946), chap. ii.

[17] To quote Notestein, *op. cit.*, pp. 39–40, on this point: ". . . Fertility was much less responsive to the processes of modernization. So far as we can tell from available evidence, no substantial part of the modern population growth has come from a rise in fertility. On the other hand, neither did fertility decline with mortality. The reasons why fertility failed to decline with mortality are clear enough in general terms. Any society having to face the heavy mortality characteristic of the premodern era must have high fertility to survive. All such societies are therefore ingeniously arranged to obtain the required births. Their religious doctrines, moral codes, laws, education, community customs, marriage habits, and family organizations are all focused toward maintaining high fertility. These change only gradually and in response to the strangest stimulation. Therefore, mortality declined, but a fertility high enough to permit survival in an earlier period began producing rapid growth."

[18] Based on data from the 1940 Census. Note that Grundy County had a level-of-living index of 196, while that of Breathitt was 5 in 1945, according to the Hagood study (*op. cit.*).

that have been by-passed in the course of economic development.[19] The result is fairly obvious; in the communities that have been favored, people who can work may do so more of the time during the year; and the division of labor has been carried further, thus permitting them to specialize to better account. Here, again, to illustrate the consequences one needs only to refer to farming in central Iowa compared to that in eastern Kentucky.[20]

[19] "Underemployment," which is unproductive employment in the sense that a person produces a smaller product than he could elsewhere in the economy, is not included here, for it properly belongs under the set of conditions that impede factor-price equalization.

[20] There are many clues in the available statistics, although the data are not on a county basis. One comparison may be cited. In the fall of 1945 an attempt was made by the Bureau of Agricultural Economics, by means of an enumerative survey, to ascertain the average hours that farm operators worked during the week September 16–22. These data by type of farming regions show that in the dairy areas farm operators worked nearly twice as many hours (59) as did those in the general and self-sufficing areas (31). For the Corn Belt, the equivalent figure was 57 hours. The following table has been taken from unpublished data made available by Louis J. Ducoff, of the Bureau of Agricultural Economics:

AVERAGE HOURS WORKED BY FARM OPERATORS

	Week of September 16–22, 1945	Week of July 14–20, 1946
Regional Areas:		
United States	43	48
General and self-sufficing areas	31	37
Cotton Belt	35	35
Western specialty-crop areas	48	50
Range and livestock area	53	58
Corn Belt	57	65
Dairy areas	59	65
Wheat areas	59	69
Type-of-Farming Areas:		
South, general and self-sufficing areas	25	29
South, Cotton Belt	35	34
North-central, general and self-sufficing areas	40	46
West, wheat areas	44	60
Western specialty-crop areas	48	50
Northeast, general and self-sufficing areas	48	59
Northeast, dairy areas	52	59
West, range and livestock areas	55	57
North-central, Corn Belt	58	65
North-central, dairy areas	64	67
North-central, wheat areas	65	76

We conclude this section with the observation that it would appear from even these brief explorations that the conditions which determine the proportion of a population of a community that contributes to income is a consequence of the social evolution of our society set in motion by the character of our economic development.

2. CONDITIONS THAT DETERMINE THE ABILITIES OF A POPULATION TO PRODUCE

It will be convenient to classify abilities into those with which people are naturally endowed and those which they acquire. As to the first, we have already indicated that it would seem plausible to state that most communities at the time that industrialization began or at the time of settlement were roughly the same in the distribution of native talents. Moreover, communities in agriculture at present may not differ substantially on this score.[21] However, as for the abilities that can be acquired, differences have arisen as a result of the way in which our economy has developed. We can achieve considerable insight into this matter by abstracting from certain social and physical aspects in order to isolate (1) the process by which capital is "invested" in human agents, (2) the amount of capital thus invested, and (3) the effect of this investment upon the productivity of a population.

An analysis of the formation of capital in this sphere is beset by many major difficulties. It is exceedingly hard to draw a line of demarcation between inputs for

[21] Howard W. Beers (*Mobility of Rural Population* [Bull. 505, Kentucky Agr. Exper. Stat., June, 1947], p. 40) advances the hypothesis that rural-urban migration has selected the less able youths, leaving on farms those who are most capable. For a more comprehensive review see Thomas, *op. cit.* (discussed in n. 3 above).

consumption and those that act as capital. Many of these inputs undoubtedly make contributions both ways; and, when it comes to measurement, the existing capital market gives us little or no information because it is not organized to finance "investments" that enhance the abilities of people as producers. Where men are not slaves but free, a mortgage on capital which in the process of formation becomes imbedded in a person requires the kind of instrument that has had no appeal to financial institutions, even though the earnings on such investments in many cases would prove very attractive.[22] Consequently, as one would expect, the supply of capital employed to improve the abilities of a population have come from two major sources—from the family and from the community in which a person lives. Furthermore, with few exceptions, the capital is made available without recourse, that is, the individual is under no obligation to repay his family or community. In substance, then, we have, for all practical purposes, no capital market serving this need. The institutions that exist, namely, the family and the community, bear the brunt of this function, and the results are all too evident. The amount that is invested per human agent is extremely unequal from one community to another. Where the community is poor, families are also poor, and therefore neither of them can afford to make these investments; the converse, of course, is true in a rich community. The implications of this process to our argument are clear; economic development has been uneven; some communities have been left behind; these communities and the families in them have few resources per head and fewer still per child at hand to train and rear their children, while the communities and families situated in the main stream of economic development have many resources available for these purposes.[23]

There is not much that one can say on the amount of capital that is invested in human agents except to express the belief that it has become very large indeed in countries with an advanced industrial economy and especially so in the best-situated communities in the United States. Any attempt to measure this outlay encounters major obstacles, for reasons already touched upon.

There remain, then, the effects of investments of this nature upon the productivity of a population. It will be useful to distinguish between (1) the effects that alter the comparability of human resources in terms of abilities to do a given type of work equally well and (2) the effects that express themselves in awareness of alternative opportunities, in the capacity to communicate, and in willingness to migrate. In the case of the first of these two effects—that pertaining to comparability—it is evident that where the investment consists of preparing an individual for a task that requires years of careful and systematic training, such as is necessary to become a doctor, a lawyer, a scientist, or a skilled technologist, the person who has received this training is no longer comparable to a person who has not had similar preparation. What about the bulk of the work in agri-

[22] Earl Hamilton has called my attention to the excellent observations of Marshall on certain aspects of this problem (*Principles of Economics* [8th ed.; London: Macmillan & Co., Ltd., 1930], see esp. pp. 560–63).

[23] In 1938, Mississippi allocated about 5.4 per cent of its income to the support of secondary and elementary schools, while Iowa used about 3.9 per cent of its income for this purpose; and yet the amount that was available per enrolled student was about $22.00 in Mississippi compared to $74.00 in Iowa.

culture, where advanced technology is employed, and in industry generally? It appears that in the short run a significant difference in productivity exists between those who have had the advantages that go with this class of investment as compared to those who have not. To illustrate, a young migrant from eastern Kentucky would probably find himself at some disadvantage on a typical Iowa farm or in doing a given job in industry compared to a young migrant from a rich farming community and from a fairly prosperous family in western Kentucky; but this margin of disadvantage in most cases is likely to disappear rather rapidly. The two men would differ appreciably in the short run, that is, for a month or two or even for as long as a year, but, after that, they would be on about equal footing in terms of the abilities that are required to do such work. The second of these effects involving awareness of opportunities and a willingness to migrate, so it seems to me, is by all odds the more important of the two in accounting for the unequal incomes earned per person within agriculture. These effects, however, are basic in getting at the imperfect factor-price equalization that exists and therefore takes us to the third set of conditions underlying the disparity in incomes under consideration.

3. CONDITIONS THAT IMPEDE FACTOR-PRICE EQUALIZATION

We have explored briefly the conditions that increase the proportion of the population contributing to income and that improve the abilities of a population to produce, and I have endeavored to show how the forces of economic development, expressing themselves through the existing family and community institutions, alter these conditions. There still remains a third set of conditions which appear to play an important role in contributing to the growing disparity in income among communities within agriculture.

Two questions may be helpful in putting certain aspects of the problem of achieving factor-price equalization into focus. Does economic progress, as we have known it, require a vast and unprecedented transfer of human agents? The answer is, I am sure, without qualification in the affirmative. Does economic progress give rise to major impediments to migration? The answer to this query may seem to be less unequivocal. It will become evident, however, as we proceed that an equally affirmative reply is warranted. What happens in this connection is about as follows: We have seen how economic development sets the stage for the emergence of the advanced industrial demographic type of population alongside what was formerly a common form, that is, the pre-industrial demographic type. As the differences between these two types increase, the cultural impediments to migration become greater. It is these impediments to a transfer of the human factor that bring about a series of short-run equilibria, which, as time goes on, fall increasingly short of achieving an optimum in the allocation of resources.[24]

[24] When factor-price equalization is based upon given wants, the cultural differences under consideration are taken as attributes of the existing pattern of wants. When the problem is approached in this way, the cultural differences between a community that has been by-passed by economic growth and progress and a community located at or near the centers of industrialization are not impediments to factor-price equalization but a part of the existing wants of the people in the two communities. It follows from this formulation that the two communities may be in equilibrium in terms of resource allocation, although great differences in the level of living exist. Another approach, the one on which this analysis rests, proceeds on the assumption that wants are not given and constant but that they are the result of cultural developments which are not independent of industrialization. One may view the changes in wants that emerge as industrialization

Two aspects require further elaboration, namely, (1) the comparability of a typical human agent located in a poor, pre-industrial demographic-type community and the typical person situated in an advanced community and (2) the nature of the cultural impediments and their role as costs to the economy. Before touching on these, an observation on factor-price equalization among pre-industrial communities may be instructive. Let us take two communities of this demographic type with the same cultural values, including similar standards of living, and let us assume, further, that the fortunes of the one improve. To make this concrete, let the increase in production come from an irrigation project without cost to the community. Is it necessary for people to migrate from the less fortunate community to the one that has the windfall afforded by irrigation in order to attain factor-price equalization? The answer is that, even without a common market for either factors or products—that is, *without either migration or trade*—factor-price equalization will occur as a consequence of the upward surge in population in the community with the new irrigation project under the assumptions as I have formulated them. Factor-price equalization, however, cannot occur when the community benefiting from a windfall is of the advanced industrial demographic type and the other a pre-industrial community, unless a transfer of factors takes place.[25]

The question of comparability of human agents as factors in this context raises a number of issues which are exceedingly difficult to resolve. Entirely too little work has been done on this problem;[26] and, as is obvious, the answer must come, in the last analysis, from an appeal to empirical reality. All that one can do with the fragmentary materials now available is to express one's belief on the matter. It seems to me that most of the people located at present in poor communities within agriculture are essentially comparable to most of the people situated in rich communities in terms of their capacities to produce if allowance is made for the short-run acclimatization required for the improvement in abilities which I have already considered. If this is true, it follows that the cultural impediments are indeed a heavy burden because the income earned by these (human) factors is very unequal between communi-

proceeds as a movement away from a pre-industrial pattern of wants toward new, more dominant industrial-urban patterns and that the differences in wants are the result of lags in this adjustment. It is better, however, in order to simplify the analytical problem, to introduce a value-judgment explicitly in this connection. This value-judgment is simply to the effect that the wants that characterize the communities that have been by-passed by industrial growth and progress are inferior to the wants which are emerging in the main stream of industrialization. Given this valuation, it follows that the cultural factors that isolate the backward community and press upon it the relatively inferior wants operate as cultural impediments and, as such, impede factor-price equalization.

[25] P. A. Samuelson in two recent articles in the *Economic Journal*, "International Trade and Equalization of Factor Prices" (Vol. LXVIII [June, 1948]) and "International Factor-Price Equalization Once Again" (Vol. LXIX [June, 1949]), has attempted to show that free commodity trade will, under certain conditions, inevitably lead to complete factor-price equalization. The conditions that are specified in his analysis are, however, far removed from the hard realities that underlie the existing geographical inequalities.

[26] A major research program made possible by a grant from the Rockefeller Foundation on the malallocation of resources that characterize agricultural production is under way at the University of Chicago, being carried forward largely by Professor D. Gale Johnson. This research program has as one of its objectives the determination of the comparability of resources within agriculture and between agriculture and other sectors of the economy and in the connection focusing primarily on the human agent.

ties. Is it possible that the cultural impediments can be so great and so costly? Here the researches of the sociologists are making important contributions, and their results indicate quite clearly that it is no easy matter for people to pull up their roots and leave the folk society, with its strong local-personal-informal relations, and transplant themselves into an impersonal-formal, less locally oriented, urban-minded community. The economist must leave it to the sociologist to isolate and identify the nature of these cultural impediments; the economist, however, can and should come to grips with the cost aspects. The burden of these impediments is obviously a continuing one. If anything, measured in terms of the unequal factor prices that exist, they have become greater over time. If the "price" of eliminating, or even only substantially diminishing, these impediments is a nonrecurring cost for any given migrant, then the probabilities are high that society could achieve a very considerable gain by taking positive actions to diminish the adverse effects of these impediments upon factor-price equalization and, in so doing, diminish significantly the disparity in incomes on which we have concentrated our attention in this paper.