PART VI

Goals and Values



Chapter 16

C. B. BAKER Instrumental Goals University of Illinois and Economic Growth

ROWTH is by definition a dynamic phenomenon. For most ques-+ tions of social relevance economic growth can be identified simply as a condition in which per capita output of goods and services is increasing when measured in real terms. This definition implies measurement of change. A level of real output has little factual meaning.

I infer it to be my function in this conference to review what we can, as economists, assume to be the goals held by society in relation to economic growth. We shall then attempt to identify what appear to be the goals of individual farmers which serve as proximate sources of their motivation, i.e., instrumental goals. Finally, we shall attempt an appraisal of these goals in terms of their consistency with social goals in economic growth.

SOCIAL GOALS IN A GROWING ECONOMY

With a stable or increasing human population, economic growth can be brought about only by two means: (1) increasing efficiency in the use of given resources and the distribution of aggregate output; or (2) increasing the quantity or improving the quality 1 of the resources themselves. To the first we orient that body of theory we know as welfare economics; to the second, the less developed theory of economic change, including resource development and organizational advance.

These means are distinct in an analytical sense and will be reviewed separately. Yet in a problem sense they can hardly be separated. We shall attempt to develop the basis for hypotheses which cut across both areas of theory when so indicated by problems at hand.

¹A change in resource quality is perhaps most conveniently defined as such a change in the properties of a resource as would result, without change in resource identity, in a change of production coefficient in any of its uses, given the quantity and quality of other resources used in the relevant production process. An improvement would be implied if the production coefficient were increased in the change.

Goals in Allocative Efficiency

Modern welfare economics centers on the notion of equilibrium. Criteria which fix the equilibria relate to consumption, production, and marketing. They are derived from the single condition that the value of net output from given resources is a maximum, where net output is valued in terms of utility among a given population of consumers with particular sets of preferences. Technology, tastes, and aggregate capital are assumed constant during adjustments to attain these equilibria. Thus the "efficiency" with which this theory is concerned is of an allocative character. The existing distribution of resource ownership is taken as a "point of departure." Adjustments to attain equilibria may and can, within our frame of reference, occasion a redistribution of resource ownership. As a consequence, a redistribution may also occur among resource owners in their respective claims on the aggregate output.

The results are well known² and can be summarized briefly here. To maximize utility from a given sum of disposable income, the consumer so allocates this sum among known alternatives as to equate ratios of their marginal utilities with, respectively, ratios of their prices. A behavioral assumption is required to give this result. The consumer is assumed to order his preferences in some systematic and consistent manner. In this paper we need not be overly concerned with the host of problems raised by psychologists and by would-be psychologists from our own group. The remarkable thing is that the assumption holds as nearly as it does.

Between consumers, produced goods and services are optimally distributed when the marginal rates at which they substitute in the preferences of any one consumer equal, respectively, the marginal rates of substitution in the preferences of any other consumer.³ In both this and the preceding condition, optima are assured, given other assumptions already stated, if the alternatives are made available to consumers in terms of prices which are constants with respect to quantities taken by the consumers.

Given markets for both resources and products, producers must meet three conditions to be consistent with a welfare-maximizing use of resources. In producing a given commodity, the producer is required to select, from techniques available to him, that particular technique or combination of techniques which will give for each quantity of resources employed a maximum output. Also, for a given quantity

²For an excellent summary of the welfare conditions and their proofs, see Reder, M. W., Studies in the Theory of Welfare Economics, Columbia University Press, 1947. See especially Chap. 3.

³This condition leaves an indeterminacy in the distribution of goods and services between consumers. But the indeterminacy can be resolved by recourse to action which, while improving the welfare position of one consumer, need not impair the welfare of the other consumer (s). For an elaboration of this point, see, Scitovsky, Tibor, Welfare and Competition, Irwin, Inc., 1951, Chap. 4.

of product, resources must be so combined as to equate ratios of their marginal physical products with respective ratios of their prices.

A third condition to be met by the producer is somewhat more subtle. Some of his resources are committed in total quantity for a specified period of time; some are variable in quantities depending on output. The welfare-maximizing use of resources is concerned only with those which are variable in amount. Among these, some are specialized in their functions, thus specific to a particular product; others can be shifted between products. We calculate a marginal cost of output from the use of resources specific to a given product. Subtracting this from the marginal revenue of output from the same product, we obtain what might be termed a net marginal revenue of output for the product. Our welfare-maximizing condition requires that variable resources with alternative product uses be so allocated that marginal rates at which products are thus substitutable are equal (inversely) with respective ratios of their net marginal revenues. For products sold into purely competitive markets, the marginal revenues of output become prices of output. In these cases net marginal revenues are prices net of the marginal cost of output from use of resources specific to the relevant products.

Between producers, each with given purchasing power, resources are optimally distributed when for given products the marginal rates at which resources substitute for any one producer are equal to their marginal rates of substitution for any other producer. This condition is met when the resources are made available at prices which are constants with respect to quantities purchased. As with consumers (they in terms of utility), this condition in no way specifies (or rules out) an optimum in equity between producers and their consequent claim to income. It merely takes the initial claim of producers to the aggregate resources as given.

Between producers in the aggregate and consumers in the aggregate, a market functions optimally, i.e., in a welfare-maximizing manner, if, the preceding conditions having been met, the marginal rate at which any one product substitutes for any other product in production is equal, respectively, to the marginal rate at which the same products substitute in consumption.

Failure to meet one or another of these conditions is presumed to offer particular individuals an opportunity to increase their utility in consumption or returns above variable cost in production (including performance of marketing functions). They would also thereby increase the aggregate of utility for society as a whole. Thus, divergence of actual from equilibrium conditions creates opportunities for increasing real output per capita and hence, by definition, economic growth. The welfare conditions constitute one set of social goals in the sense that they imply limits attainable in economic growth from improvements in allocative efficiency.

Goals in Economic Change

Added sources of economic growth are found in assumptions used to specify the welfare economics model. These include changes in: (1) population (more specifically, labor resources), (2) technology, (3) capital resources, and (4) tastes. Since Malthus, economists have paid little serious attention to problems in population size. We lack consensus even on terms in which to conceive of an optimum in population size. It has seemed sensible to treat it as an autonomous variable, the effects of which are to be reckoned with, not explained. Thus, considerable attention is given to change in structure: age, sex, occupation, spatial distribution, etc., as well as to predictions in size. But goals related to population size are hardly even visualized in any concrete sense.

By technology we mean the array of production techniques by which resources can be combined in production and marketing. A change in technology creates the opportunity to shift a production function, i.e., to innovate. As a society, we imply a tangible goal in innovation: that it proceed so long as: (1) the value of added output exceeds the cost of innovation or (2) if applicable, costs reduced by innovation exceed the value of reduced output. Yet we have given little serious attention to goals relating to technological change itself. Instead, we allocate research resources, for the most part, according to: (1) the interests of owners of such resources, (2) the likelihood of success in new research ventures, and (3) the consequences, for owners of research resources, of success in research. The most important (partial) exception relates to research in agricultural technology, where a fairly large part of the research is publicly financed.

When private sources are used to finance research, motivating goals are readily conceived. They hardly differ from any other activity in which the firm participates. When research is financed with public funds, however, the goals are far more difficult to conceive. Without such goals, innovators are placed at a distinct disadvantage. Unless they have some means for controlling the allocation of research resources, they are subject to sudden changes in technology in which they are powerless to act in any way other than through competitive innovation. Yet aggregate returns are reduced if the price elasticity of demand for their product is less than unity over the relevant range of quantities. This does not mean that society's welfare is necessarily reduced. Other individuals may well benefit from the change. Yet serious question is raised concerning the total welfare position, in general, and the welfare position of innovators, in particular.

The early innovator in pure competition gains if: (1) the technology yields an increased rate of output with respect to variable inputs and (2) the cost of resources with which to innovate is exceeded by either (a) an increase in total receipt of (b) a reduction in cost of resources already used in the production process. Buyers from the competitive industry benefit in any event because of a shifted supply. The relative benefit shared between producers and the various levels of subsequent buyers, here considered an aggregate, depends on the relative price elasticities of demand and supply. The lower the price elasticity of demand (supply) relative to supply (demand), the greater the share of benefit to sellers (buyers). Regardless, however, of relative benefits, society generally benefits because no one yet has been harmed.

Those who fail to adopt a technology successful in these terms are disadvantaged in a welfare sense. The damage comes from either or both of two sources: a reduction in price of product, resulting from shifted supply, or a reduction in value of resources fixed in use, because of either lower imputed returns or from obsolescence incident to innovation. In any event, income to non-innovators is reduced and a problem is created. It might seem that if the total value of the changed output exceeds the total value of output prior to change by more than the total cost of added resources, aggregate welfare has been increased. Yet this cannot be said without qualification unless we are willing to assume that utility changes can be compared between different persons in the economic reorganization. In that case we could calculate the amount of increase in utility required for beneficiaries to offset a loss in utility for losers without yielding a total reduction in welfare.

Reluctance to do this has made the modern economist conservative. Before judging a reorganization to be welfare-increasing he insists that those harmed by reorganization must be compensated. Without compensation, final appraisal, on economic grounds, is withheld. This does not preclude the use of economics in analysis of alternatives. Yet limitations which prevent the economist from concluding whether economic welfare has been increased or decreased certainly restrict his usefulness in the problem. Can this restriction be lifted?

Farmers harmed by innovation can be grouped into those who migrate from farming instead of innovating and those who do not migrate. The non-migrants, in turn, include those who innovate late and those who do not innovate at all. It might be argued that for many migrants, technological change often crystallized the consequences of alternatives long vaguely conceived. If resources in the nonfarm economy are essentially fully employed, migration improves individual welfare often enough that society might be justified in ignoring this particular problem. Migration occurs, after all, from expectation of a better alternative. Over time, therefore, migrants may well benefit from technological change. The action called for here is education plus, possibly, financial aid for moving and re-training.

Returning now to non-migrant farmers harmed by innovation, the situation is more doubtful. Among those who innovate late, the extent of damage is a matter of degree, depending on the length of lag and the effect of innovation on aggregate supply. To those electing to remain in agriculture without innovating, damage clearly has been done. We could argue that such action reflects a low supply price for the relevant resources in the first place. But this overlooks the possibility of specialized resources without ready nonfarm alternatives. The smallscale dairy farmer, faced with a milk supply shifted with bulk-line milk handling, capital inadequate to finance innovation, yet too old to develop new skills, may have little choice than to accept his reduced welfare position. Society may well be obligated to redress such an operator whose income position has been worsened by publicly-financed technological changes. The real problem would be to accomplish this action without holding, in agriculture, those who can move productively into alternative employment.

During the past decade several economists⁴ have explored the area of economic growth through investigation of conditions which determine optima in rates of quantity change in resources, i.e., in capital formation and growth in labor resources. The major problem has centered on attainment of a rate of capital formation to satisfy certain growth requirements without jeopardizing cyclical stability in the employment of capital and labor resources.

Since 1920 the rate of capital formation seems to have exceeded the rate of growth in labor resources. Despite this fact and the theoretical expectation of diminishing returns to capital owners, the average (and hence marginal) productivity of capital appears also to have increased — still more, in fact, than for capital.

As pointed out by Professor Fellner,⁵ these trends provide conditions necessary (but not sufficient) for increased returns to owners of both capital and labor resources. Yet further innovations may create serious problems. Should they save capital relative to labor, returns to capital owners could diminish to levels which would discourage new investment. The result might be unemployed resources in a cyclical sense, if not a slowed rate of growth, even while average productivity of capital increases.

On the other hand, should new innovations save labor relative to capital, returns to labor could diminish. The resulting effect on aggregate demand could again create conditions leading to unemployed resources. Real wages have increased relative to returns to capital owners. Yet we can hardly infer from this that important changes have taken place in relative productivity of capital and labor. In this same period, the organization of labor may have reduced the spread between marginal value product of labor and realized wage rates.

Agricultural economists have by now reached near-unanimity on the need for net migration of people from farms. The reasons are to: (1) raise the marginal value product of labor and (2) reduce the number of claimants to aggregate farm income. In large measure society has acquiesced. Social goals in economic growth are promoted by a supply

⁴E.g., Harrod, R. F., Towards a Dynamic Economics, Macmillan, 1948; Domar, E. D., "Expansion and employment," Amer. Econ. Rev., Mar., 1947; Hamberg, D., "Income growth in secular stagnation and inflation," Econ. Jour., Sept., 1953; et al.

⁵Fellner, William J., "Discussion of papers by Moses Abramovitz and Paul T. Homan," Amer. Econ. Rev., Vol. 46, No. 2, May, 1956.

of added labor from farms. Not only are the numbers important, but also the terms by which the labor is made available. With a low marginal value product in agriculture, the labor is supplied to the nonfarm sector at relatively low prices. Allocative efficiency is thus improved and, perhaps just as important, likely leads to better balance in growth between capital and labor. In fact, labor from large-scale immigration, drastically reduced some three decades ago, has been supplanted only by migration from farms and increased numbers of women in the labor force.

The attractiveness of this solution is not hard to see. In 1953, 5.5 million farm families received a total net income, before income taxes, of 19 billion dollars, an average of \$3,459 per family. In contrast, 35.6 million nonfarm families received 227.8 billion dollars, an average of \$6,393 per family.⁶ These aggregates, distributed as shown in Table 16.1, include income from all sources. Thus, the figures for farm families include off-farm income; those for nonfarm families, income from farm sources.

Compare now the percent of all families (columns 3 and 7) with the percent of all income (columns 5 and 9). For each group, we can determine with these comparisons, the level of income above which families received more than an equally proportioned income distribution and below which, less.⁷ The break for farm families comes at the \$3,000-\$3,999 level; for nonfarm families, at \$6,000-7,499. The 57 percent of farm families below the "break point" received 27 percent of personal income in agriculture. The 61 percent of nonfarm families below the "break point" received 38 percent of personal income in the nonfarm sector. The apparent difference in distribution characteristics is doubtless offset in part by the greater relative importance of noncash income in the lower income groups in agriculture.

We are concerned particularly with families below these "break points." To improve the income position of (remaining) farm families would require migration especially from this group of farm families. Yet, there is little reason to suppose these families, after migration, would rise in the nonfarm income scale beyond the "break point" there. A movement of all 3,121,000 such families in 1953 would have left only 2,361,000 on farms. On farms, the migrant families received 5.1 billion dollars, an average of \$1,641 per family. If the remaining farmers could absorb the vacated farms without reducing output, income per remaining family would increase from a pre-migration average of \$5,861 to \$8,031, less the added cost from larger operations. If even as much as two-thirds of the added income were offset by added cost, the income per remaining farm family would increase to the average level of nonfarm families.

259

⁶Goldsmith, Selma, "Income distribution in the United States, 1950-53," Supplement to Survey of Current Business, Mar., 1955.

⁷This in no way implies a criterion for income distribution. It serves merely as a convenient point at which to separate high from low income recipients in each sector.

Family personal income before income taxes	Farm operator families				Nonfarm families				Total personal		
	Number		Income		Number		Income		income to families b		
	Thou- sands	Percent of total	Dollars	Percent of total	Thou- sands	Percent of total	Dollars	Percent of total	Farm	Nonfarm	
\$15,000 and over	69	1.3	\$25,545	9.4	1,374	3.9	\$28,321	17.1	\$ 1,777	\$ 38,916	0
10,000-14,999	120	2.2	11,903	7.6	2,089	5.9	12,111	11.1	1,431	25,302	•
7,500- 9,999	198	3.6	8,539	8.9	4,506	12.7	8,520	16.8	1,693	38,392	B
6,000- 7,499	267	4.9	6,660	9.4	5,763	16.2	6,700	16.9	1,776	38,613	•
5,000- 5,999	349	6.3	5,462	10.0	5,570	15.6	5,471	13.4	1,907	30,471	B
4,000- 4,999	556	10.1	4,462	13.1	5,950	16.7	4,494	11.7	2,479	26,737	F
3,000- 3,999	802	14.6	3,460	14.6	5,143	14.4	3,536	8.0	2,776	18,186	E
2,000- 2,999	1,096	20.0	2,481	14.3	3,287	9.2	2,543	3.7	2,719	8,358	R
1,000- 1,999	1,342	24.5	1,497	10.6	1,724	4.8	1,556	1.2	2,009	2,684	
Less than \$1,000	683	12.5	<u> </u>	2.1	222	0.6	481	0.1	394	107	
Total	5,482	100.0	\$ 3,459	100.0	35,628	100.0	\$ 6,393	100.0	18,961	\$227,766	

 Table 16.1.
 Family Personal Income Before Income Taxes for U. S. Farm and Nonfarm Families, by Size Classes, 1953^a

^aSource: Goldsmith, Selma, "Income distribution in the United States, 1950-53," Survey of Current Business, U.S. Department of Commerce, 1955, p. 15. ^bIn millions of dollars.

BAKEE

Family personal income before income taxes	Number (thousands)	Percent of migrant families	Average income
\$5,000-5,999	796	25.5	\$5,471
4,000-4,999	849	27.2	4,494
3,000-3,999	734	23.5	3,536
2,000-2,999	468	15.0	2,543
1,000-1,999	243	7.8	1,556
Less than 1,000	31	1.0	481
Total	3,121	100.0	\$3,956

Table 16.2. Family Personal Income for Families Migrating from Low-Income Farms, Based on 1953 Data

The big question relates to the outcome for migrant families. If we assume they are absorbed into the nonfarm sector with incomes distributed as found in the nonfarm sector below the "break point," the results would be as shown in Table 16.2. Aggregate income would increase from 5.1 billion dollars to 12.4 billion dollars; average income, from \$1,641 to \$3,956 per family.

Finally, such an increase in total income would have a small, though not negligible, effect on demand for farm products and, hence, upon incomes of remaining farm families. The increase would generate from two sources: (1) cash purchases substituted for nome-produced products and (2) added income. Assuming an income elasticity of 0.3 for food expenditure, half of which would go to the farm sector,⁸ aggregate farm income would be increased by \$168,534,000, about \$70 per remaining farm family, due to the second factor alone. Though unmeasured, the first factor might easily have twice the effect.

So viewed, few programs would appear as attractive as one which would induce off-farm migration from low-income farms. Large-scale migration from farms has taken place and is continuing, of course. But available evidence suggests that a considerable part of the migration comes from higher-income farm families.⁹ Granted that our assumptions here have been crude, the results in terms of income for remaining farm families and for migrants are impressive. We have not taken account of moving costs for migrants or the effect of migration on the pricing of nonfarm labor. Presumably, the marginal value product of nonfarm labor would be reduced while the marginal value product of capital resources would be increased. We have assumed throughout, it will be recalled, full employment of resources.

Faced with these results and the nearly complete consensus among agricultural economists, we feel that surely the problem is not this simple. Otherwise we would have found, by this time, the means for

⁸See summaries of such estimates in Schultz, T. W., The Economic Organization of Agriculture, McGraw-Hill, New York, 1953, pp. 45ff.; and Daly, Rex E., "The long-run demand for farm products," Agr. Econ. Res., Vol. 8, No. 3, July, 1956. *E.g., see Bachmura, Frank T., "Migration and factor adjustment in Lower Mississippi

Valley agriculture: 1940-50," Jour. Farm Econ., Vol. 38, No. 4, Nov., 1956.

implementing such a program. Are there alternatives less onerous, which would yield the equivalent results in terms of welfare for farm families? Before turning to this question which will remain basically unanswered in this paper, we need to investigate goals of individuals per se, apart from goals evidenced by groups to which they belong.

INSTRUMENTAL GOALS OF INDIVIDUALS

The individual has two sets of instrumental goals which are essentially economic. The first relates to income; the second, to equity in asset holdings — to wealth, to use an old-fashioned word. The individual's income goals center on three properties of income: (1) level, (2) time distribution, and (3) variation. His interest in wealth centers on four properties of wealth: (1) total equity in owned assets, (2) structure of the equity, (3) rate of equity accumulation, and (4) fluctuation in asset values.

Society is interested primarily in income (or output), the flow of product from the capital aggregate. The capital aggregate itself has little social relevance in a financial sense. Social interest lies almost entirely in opportunities for increasing the flow of output, or contrariwise, the danger of diminution should the capital aggregate be reduced. Thus we engage in publicly supported research to add to our stock of real capital, as well as to better use the existing stock. Society is interested also in protecting certain assets from lasting impairment. Yet the effects of such action on the value of the capital aggregate have little social relevance. There are no gains from transactions available to "society" comparable with opportunities available to individuals within a society.

Income Goals

Of the three properties of income, agricultural economists have been most concerned with income levels. We customarily assume that an individual selects among alternatives to maximize the expected level of some net income. Ordinarily a time span also is specified (assumed), for purposes of classifying expenses into categories of fixed and variable with respect to output. The latter only are relevant in defining the net income to be maximized. In producing a given product, the costs of various levels of output are minimized when resources are combined to equate increments to costs from each resource (or resource aggregate). Returns above variable costs are then maximized, when, with a given outlay, resources are allocated among products to equate increments from each value of output above its respective marginal cost. So far these solutions for optima within the firm coincide neatly with goals of society in allocative efficiency and thus in economic growth.

Analytical complications arise immediately when income goals are extended beyond the simple one of income level in a given time period. The passage of time entails, first of all, a distribution of income among time periods. An optimum distribution requires that a given aggregate of income be so allocated between time periods as to equate returns for each time period in terms of marginal utility. The notion of time preference is used to reflect differential values placed on units of income which differ only in time availability. Theoretically, the notion is clear enough. Empirically, the concept is difficult to use. Time preference is an individually conceived valuing system hardly subject to coherent estimate by an individual, much less capable of tangible measurement and aggregation over a range of individuals.

A second complication originates in the income consequences from uncertain expectations in: (1) quantities of resource use, (2) quantities of products available for sale, (3) prices of resources for which commitments are implied though not contracted, and (4) prices of products to be sold. From society's viewpoint this problem might be ignored were it not that the degree of uncertainty differs, for the farmer, among the different resources and products. Because of this difference, individual producers adopt production techniques and patterns of resource use which, while reflecting individual response to uncertainty, are not necessarily consistent with society's goals in resource use and in economic growth.

Agricultural economists have conceived of income variation usually in terms of variance – or at least of some symmetrical¹⁰ measure of dispersion. Assuming the farmer does likewise, we conjecture that: (1) he prefers a smaller variance in income to a larger one, (2) he has a scale of preference which determines his indifference to selected combinations of level and variance in income, and (3) the rate at which he substitutes (with indifference) level of income for variance of income increases with increases in variance.¹¹

Clearly we need to know far more than we do about the way in which individuals conceive of uncertainty before we can be even reasonably sure of our postulates on goals which relate to the passage of time. Moreover, we need to know more about the manner in which society can be said to be concerned with uncertainty. Society itself (or its chosen agencies) can err in expectation. Considering the consequences of such errors, there may be real benefits from allowing a large number of individuals to form expectations and make individual decisions. Through diversity, a measure of flexibility may thus be yielded which society might well afford to pay for, if necessary, with a sub-optimum resource organization when compared with one based on "certain" expectations.

Goals in Asset Equity

The legal, sociological, and economic structure of the firm in agriculture renders it peculiarly dependent on proprietorship equity as a

263

¹⁰An interesting attempt to introduce skewness is found in Heady, E. O., Economics of Agricultural Production and Resource Use, Prentice-Hall, 1952. See especially Chap. 15, pp. 439-64.

¹¹Lange, O., Price Flexibility and Employment, Principia Press, Inc., 1944. See especially Chap. 6, pp. 29-34.

source of finance. Farming has long been known as the occupation in which the proprietor can lose money for 30 years and then retire on his accumulated capital! Certainly growth of equity stands high on the list of factors which motivate the farmer and serve as criteria for decision-making.

To measure equity the accountant uses net worth of the firm. If the firm is owned by a single proprietor, this net worth represents the value of the proprietor's residual claim on assets of the firm. Because the firm must be liquidated to allow him to exercise this claim, net worth must be regarded as one of the more remote factors which motivate the proprietor. Yet this is the final indicator of his total success in accumulating capital.

However, equity can be structured, managed, and hence used to promote as well as to measure success in management. Normally, the individual values proximate claims more highly than remote ones based on liquidation. These lead him to favor more rather than less liquid assets. Yet the larger the total equity in a given circumstance, the lower is the proportionate requirement for liquidity purposes. With a larger total equity the individual increases his access to loan funds and hence lowers his liquidity requirements.

Uncertain expectations condition the individual in equity management as well as in production and marketing management. They lead to conservatism in incurring debt even though the loan funds are expected to result ultimately in increased total equity. Uncertain expectations lead him also to so diversify his asset holdings as to reduce his reliance on a single (or few) asset(s). Opportunities for diversification increase with the size of total equity.

In connection with growth in asset equity, we are once more reduced nearly to conjecture on goals of individuals. Growth in equity results from an increase in prices used for valuing owned assets, a diversion of income to the purchase of new assets, or reduction of indebtedness. The diversion or debt reduction alternatives entail an opportunity cost which consists of utility from spending the diverted income on consumer goods and services. To benefit from appreciation in the price of assets requires the willingness to assume the risk that asset values might go down.

INDIVIDUAL GOALS AND SOCIAL GOALS

An individual contributes to growth if he: (1) responds to a situation of disequilibrium in such way as to restore equilibrium or (2) creates by his activity the basis for an increase in quantity or an improvement in quality of resources available to society. The first type of contribution comes simply from alertness to existing opportunities. Were an individual to conform to economic goals of society already outlined under "allocative efficiency," his economic success would be limited only by his ability to: (1) predict accurately the relevant <u>ex ante</u> production and consumption coefficients and prices and (2) manage the consequences of failure in these predictions. A society comprised of such individuals would, in the absence of economic change, allocate resources and products ultimately in accordance with the welfare conditions already outlined.

The second type of contribution may be the more difficult to make. One of the difficulties in relating goals of individuals to goals of society lies in the difference in values placed on income and on stocks of resources. For society a stock of resources is important only as a source of output. For an individual the stock of resources is important not only for this purpose, but also because his stock of resources creates the basis for a possible capital gain. In the latter purpose the individual alone participates. Capital gain is a phenomenon of market transactions — or market opportunities which exist among individuals within a society. Participation of a whole society in capital gains from stocks of resources is of nominal significance. Aside from some problems in distribution it would matter little to society in the aggregate if the value of all assets were to be reduced by half or doubled.

To improve allocative efficiency, we have shown that a further, even accelerated, shift of labor from farm to nonfarm employment would be beneficial. Yet, there is another type of adjustment which, were it possible of attainment, would have comparable results for agriculture. One reason for a lower marginal value product for labor (and other "personal" resources) in agriculture is found in the economic structure of the farm firm. Since, typically, the firm here is essentially a pure competitor in the sale of product, the marginal value product of its resources is simply the product of marginal physical product and price. The same resource(s) in nonfarm employment might well be used to produce a commodity sold by a noncompetitive firm. This reason alone might account for a difference in marginal value products from the resource(s) in question. If so, are social goals in economic growth served by an adjustment which equates marginal value products in these circumstances? Might they be equally well served by such institutional changes as would be required to change the relevant revenue function of the farm firm from a horizontal price line to a negatively sloped marginal revenue function? Let me make it clear that I do not necessarily recommend this type of adjustment. Yet it would have the same net effect in allocative efficiency.

We have as yet said nothing of social goals relating to tastes. This nebulous area may contain the real solution for several important problems of growth. Professor Homan has gone so far as to state, "If they are to participate very much in rising income, without specific public support, farm people will have to find other uses for their time than merely producing more for the market."¹² Yet, since farmers sell products as pure competitors, their individual incomes depend on quantity of sales. They do not — indeed cannot, as individuals — sense

¹²Homan, Paul T., "The social goals of economic growth in the United States," Amer. Econ. Rev., Vol. 46, No. 2, May, 1956, pp. 24-34.

the alternative of increasing leisure, hence reducing output and income. The alternative simply does not exist for the individual farmer apart from the whole group.¹³

Outside of agriculture, many people favor reducing the already shortened work week. Perhaps we need to investigate the circumstances under which the economic position of farmers would be better served were they to respond to technological change with increased leisure instead of increased output. To be sure, the results would be ineffective until some better means is found to relate the goals and actions of individual farmers when both are affected by group behavior. And this requires that we know far more than we do about group behavior and the determinants of group behavior. Yet failure to recognize this alternative may have serious consequences in terms of goals both for society in the aggregate and for individuals.

CONCLUSION

Technology is made available to farmers by agencies outside agriculture at a rate determined largely by factors external to agriculture. Within agriculture farmers innovate competitively. Innovation generates change — a healthy result for society in the aggregate, but uncomfortable for the individual farmer.

At present we allow the individual to benefit from rewards which accrue from increase in the value of fixed assets. To participate in this form of benefit, the individual must be willing to accept the uncertainty which might yield reductions in asset values. Clearly, society has no direct interest in this sort of individual income. Yet it may be the most effective means available to promote a continued rapid rate of innovation. Are there better alternatives? I think we must confess to considerable ignorance on this question. It may be one of the more important questions which exist in this troublesome area of goals and growth and consistency between these two phenomena.

Finally, we return to the question of the feasibility of developing a means for diverting unpaid labor from highly competitive application at extreme rates into varying forms of leisure. Do we need to move people from agriculture to a position from which they can regard leisure as a respectable alternative?

¹⁵Farmers are not alone in these circumstances. Most professional persons face a similar problem. However, geographically limited markets, product differentiation, and smaller groups have permitted most other groups to exercise, as groups, some control over output.

A. N. HALTER University of Kentucky Discussion

In discussing Professor Baker's paper I should like to delineate three classes of questions. These are: (1) What questions are assumed to be answered in the paper? (2) What questions are answered by the paper? (3) What questions are left unanswered? To indicate all of the questions under each class would be too lengthy. However, I shall attempt to indicate at least one question under each class with an appropriate illustration from the paper.

QUESTIONS THAT ARE ASSUMED ANSWERED

One question that Professor Baker assumes answered is, "Can there be a moral science?"

The answer assumed by Baker is <u>yes</u>. In fact, if I may infer from what he says, Baker believes that, once a scale for measuring and predicting a human process is discovered, the same scale can be used for valuing the process, i.e., distinguishing between good and bad, right and wrong. If this is what Baker means when he says, "Even the terms appropriate for measuring growth may have consensus on criteria for valuing growth,"¹ then welfare economics is in a position to value utility. In spite of the well-known results of welfare economics, such a valuation has not been conducted. The recently developed tools² of measuring relative utility, which may be useful in predicting human behavior, are inapplicable to the situations of welfare economics where an absolute scale is implied.

¹This quotation is from a first draft of the paper. A later revision reads, "Even the terms appropriate for measuring growth may have to await consensus on criteria for valuing growth." The conclusion that a valuing scale must be derived before a measuring scale can be discovered is the converse of the one implied by the original quotation. Since my comments apply to the possibility of a value scale in science, the comments are still relevant to Baker's revised statement. The second formulation is probably less acceptable than the original, because no generalizations of science up to the present have been dependent upon a valuing scale. This does not deny that a valuing scale in social science may be necessary before it can make comparable predictions to those of physical science, e.g., those of astronomy. It merely means that all the evidence to the present leads to the conclusion that only a measuring scale is necessary for description and prediction and not a valuing scale.

²Von Neumann, J., and Morgenstern, O., Theory of Games and Economic Behavior, Princeton University Press, 1947.

Really, value never has been described or defined, in spite of all the doctrines of desire, pleasure, etc., or the biological survival theories. Morals has no efficient basic concepts similar to such concepts as "differentials" in other sciences. It rests upon the first products of analysis, abstractions which are obvious, and, as these have not transcended common sense, the whole structure totters on a mythical stage. This stage is similar to the one which described the obvious abstractions of hot and cold, soft and hard in physics before the seventeenth century.

To assume that indicating social goals of allocative efficiency can be indicated by filling the gap between the actual situation and the equilibrium conditions is analagous to assuming a static universe in physics. Economists, not having borrowed any words from the recent developments in space-time physics, as they once borrowed from the mechanistic physicist, have been left with a static vocabulary, unable to cope with the process of change that appears on the surface of human endeavors. Unfortunately we must set out to solve a great moral problem without the words of description.

QUESTIONS ANSWERED BY THE PAPER

To state a question that has been answered by Baker's paper is the most difficult part of my assignment. Although it may be the result of having read a first draft of the paper, the central objective of the paper remains obscure. The words and constructions of the paper invite misinterpretation of the meaning; hence an effort to argue points can be futile.

With your understanding of my position, I shall state the following question and Baker's answer: What are two important instrumental goals in agriculture and how are they related? The two goals if I may state them somewhat naively are: (1) more leisure and (2) more income. (The question as to what these two goals are instrumental to is unanswered and properly belongs under the next section.) The relation between these two goals is an illusive, but, nevertheless, a subtle one. The "unemployment" problem which is supposed to exist in commercial agriculture (whatever it is) is the main impediment to the attainment of either goal. The unemployment problem can be solved, according to Baker, by: (1) movement of the excess competitors to the city, thus increasing income per capita in commercial agriculture, or (2) changing the preference functions of the unemployed to include more leisure without increasing their per capita income.³

Herein lies the relationship: You cannot have one (leisure) without the other (income). Although the unemployment problem is solved, it remains for the rest of us to ascertain the means of simultaneous accomplishment of the two instrumental goals: (1) more leisure and (2) more income.

³This solution to the unemployment problem is more aptly called a deus ex machina.

DISCUSSION

QUESTIONS LEFT UNANSWERED

In the paper, the list of unanswered questions concerning instrumental goals in agriculture is extensive. However, I would be the first to admit that the task assigned to Professor Baker is difficult, though nevertheless, an important one. The place of instrumental goals in agriculture, as well as in explaining any other human activity depends upon the initial adoption of some conception concerning the nature of man. Do we realize that we are asking for a 30 minute explanation of the essence of man? How can we understand the complexities of a society without first understanding the nature of the individual? Ascribing the same teleological nature to society as is imputed to man does not answer the question. Baker becomes involved in an analytical error when he says society has goals and places values on income and stocks of resources different from those of individuals. He thus ascribes the same nature to society as he does to the individual. Obviously there is no analytical reason for making this ascription which can only lead to discovery of conflicts and paradoxes when the presupposed goals are compared.

When will we recognize that progress in understanding of the great moral problems can come only with a comprehension of the nature of man? As long as we continue to slice life and nature into vertical strips, i.e., economics, sociology, etc., we will continue in our abstracting of man away from the situation in which he is found making moral judgments. Perhaps the abstraction in the case of human behavior should be to isolate the process within which the particular behavior takes place. Then we can view the particular behavior situations as a differential of the total process in question. The process must contain all the characteristics of the whole man.

In recognition of the "would-be psychologists," when will we permit an alien idea to enter our well-trained habits of economic thought? I believe that all human disciplines need to be directed toward morality, and I doubt that the topic of this conference falls outside this category. How long can we continue to tamper with a man's morals without having more basis than Bentham's and Adam Smith's word for a glorified Utopia?