5.0 ECONOMIC WELL-BEING

The concept of the economic well-being of a unit (or "economic status" or "well-offness") refers to its ability to demand goods and services, in relation to its needs. It is an abstract concept somewhat analogous to the concept of "ability to pay" in the public finance literature, in that there is no perfect measure or even an approximate measure which may be judged clearly "best" on purely objective grounds.

Although "income" is frequently used as a measure of economic well-being (to the extent that many people simply equate the two concepts), this chapter deals with measures involving more than income alone. The concept of "economic well-being" should be distinguished from more comprehensive concepts of welfare or happiness: it is limited strictly to the ability to command material goods and services. There may be a low correlation between "economic well-being" and "happiness" for individual cases.

Because the "economic well-being" of a unit takes account of the needs for goods and services of that unit, any approximate measure of economic well-being implicitly assumes that the economic well-being of different units can be compared in a meaningful way. That is, if a particular measure assigns a higher score to unit A than to unit B, it is meaningful to say that unit A has greater economic well-being than unit B.

5.1 Specific Approaches to Measuring Economic Well-Being

All of the measurable indices of economic well-being available from the literature involve some type of operation on, or modification of, an income concept. It is presumed in this chapter that the income concept used will be drawn from among those (discussed in the previous chapter) appropriate to reflect income after taxes and transfers. The indices all involve one or more of the following adjustments:

- Income is related to an index of need, based on family composition and other factors affecting the relative economic need of the unit.
- An annuity, based on the value of wealth, is added to income.
- The value of leisure time is taken account of explicitly.

As examples, we note that Smith and Morgan (1969) divide money income by an index of need. The need standard, patterned after the Federal poverty index, varies with differences in unit composition (both the number and age of the members of the economic unit). When the ratio of money income to need is approximately one, the economic unit is roughly at the Federally established poverty line.

Weisbrod and Hansen (1968) proposed using a measure of economic well-being which adds an annuitized value of wealth to a measure of current income; the annuity value is based on the life expectancy of the head of the economic unit.

An attempt (regarded as "speculative" by the authors) was made in Morgan et al. (1974) to take account of the value of leisure time by taking a weighted product of two terms: the ratio of income to needs index (see above) and average leisure time per adult member of the economic unit.

5.2 Determining an Index of Need

Single individuals, small families, and large families differ fundamentally in their needs and in the level of economic well-being associated with a given income flow. Although most people may take for granted that well-being is inversely related to family size, holding income constant, and is directly related to income, holding family size constant, the quantitative nature of the relationship is not susceptible to exact specification.

Nicholson (1976) notes that four approaches have been suggested to the problem of establishing equivalence relationships for units of different size. They are based on (1) food expenditures, (2) expenditures on necessities -- food, clothing, and housing, (3) expenditure-income (Engel curve) analyses; and (4) expenditures on luxuries. The last approach is not common and is not discussed below.

Food Expenditures & Expenditures on Necessities

The problem of adjusting measures of economic well-being for differences in circumstances among families is not a new one in economics. For example, Milton Friedman (1952) suggested a procedure for comparing incomes

of families of different composition in 1952. Prais and Houthakker (1955/1971) investigated equivalence scales for households in different circumstances in a study of household expenditures.

However, interest in the problem was heightened considerably in the early 1960's as economists and government officials struggled with the issue of establishing a poverty threshold, both for purposes of measuring the extent of poverty and for use as a guide in establishing eligibility for various programs targeted for the low income population. From that effort a poverty threshold or "line", measured in dollars per year, was developed by the Social Security Administration (Orshansky, 1965). This index, revised annually to take account of inflation, measures the level of dollar resources necessary for the family to obtain basic necessities (food, housing, clothing, health care); the index varies with family size and location (farm vs. nonfarm). The threshold was derived by pricing the food basket required for minimally adequate nutrition for families of different sizes and multiplying that dollar figure by three, based on the twin assumptions that low income families must spend about one-third of their incomes on food and that economies of scale in food consumption and the consumption of other goods and services are identical. The index values for farm families are somewhat lower than those for non-farm families, based on research showing that farm families have lower food costs because of home grown produce (i.e., in-kind income).

The federal poverty index has been used extensively in studies of poverty and as a guide for determining eligibility for assistance programs for low income people.

For purposes of adjusting an economic well-being measure for family circumstances, a common approach has been to divide the unadjusted figure by the appropriate poverty threshold amount; the resulting ratio may then be used to rank families in terms of their relative economic well-being, without regard to differences in family size.[1]

[1]For example, see Vol. 1 of Morgan et. al. (1974) where a needs index derived using the same logic as that employed in developing the federal poverty threshold, is used to deflate various measures of income.

The major problem with using such an index to adjust for family circumstances is the lack of any theoretical or empirical justification for the poverty threshold schedule itself. There is widespread disagreement about the' degree and even the existence of economies of scale in the consumption of food and other necessities, although the'agency threshold schedule assumes significant economies of scale. The adjustment for farm/nonfarm differences faces the classical index number problem, arising from the market basket of necessities from farm and nonfarm families being significantly different. Using the farm market basket, the urban family appears to require more purchasing power to be equally well off; however, using the urban market basket, just the opposite is true. Any particular resolution of this. dilemma, of necessity based on "expert judgment," is easily challenged.

Another difficulty in using the poverty threshold index as a "deflator" is the implicit assumption that the ratio of equivalent "incomes" between families in different circumstances is constant at all standards of living, even though the index was derived to apply to families with low incomes:. Data published by the Bureau of Labor Statistics' suggests that the ratio of equivalent incomes between families in different cities may vary with the standard of living.

Madden, Pennock and Jaeger (1968) criticize the Social Security methodology, with special *reference* to its treatment of farm families, because the methodology used assumes that farm families receive all their goods and services 30 percent cheaper than nonfarm families. Using data from the 1960-61 Survey of Consumer Expenditures, they determine consumption patterns for major classes of goods and services by region and family size. Required income (budget levels) is then determined by substituting the economy food plan expenditure, and pricing the other expenditures made by a family consuming that amount of food in that region and size class.

Senaca and Taussig (1971), using the same data and two classes of expenditures, food only and food, clothing, and shelter demonstrate that equivalency relationships vary considerably with income class.

[1]See below for discussion of BLS data.

Mahoney (1974) notes that the Office of Management and Budget adjusted the methodology of the Social Security Administration poverty index by (1) raising the farm index to 85 percent of the nonfarm level for every family size, and (2) adjusting the index by changes in the Consumer Price Index, rather than changes in the cost of the *economy* food plan. The interagency committee *on the poverty* index concluded that the cost of a-family food budget still represented the firmest foundation for construction of the poverty threshold. They recommended research to allow the index to be built up from the costs of achieving minimal standards of living for food, medical care, housing and transportation.

Engel Curve Methodology

An alternative procedure, which does not require data on nutritionally adequate diets or minimum standards for housing is the Engel curve analysis. Prais and Houthakker (1955/1971) and Friedman (1952) represent early examples of this approach. Per capita consumption of certain commodities (such as food) are related statistically to income per person. Families with equal average per capita consumption are presumed to be equal. An index can be derived based on the variation of expenditure with income and the observed average propensity to consume. Friedman notes the basic difficulty, 'there are as many (indexes) as there are categories of consumption." (p. 19)

A similar approach to scaling for differences in family circumstances was proposed by Watts (1967). Based on the assumption that families which spend the same proportion of their income *on* food (or "basic necessities") are equally well-off, and using data from the 1960 Survey of Consumer Expenditures, Watts estimated an index that could be used to adjust for family size, region of the country, and urban/rural differences. Using the poverty level for a "typical" family of specified size and location, the index could be used to obtain equivalent dollar measures of economic well-being, to obtain a ratio akin to that used by Morgan and Smith.

One advantage of Watts' approach as compared with the poverty threshold approach is that, in addition to adjusting for regional price variations, it implicitly takes account of differences in market baskets among regions

and urban/rural locations. Empirically the results accord reasonably well with a priori notions of what the differences among various family sizes and locations might be.

Adjustment for Regional *Cost* of Living

The Bureau of Labor Statistics produces annual estimates of the budget required to maintain a low, medium, and high standard of living in each of twenty large metropolitan areas (U.S. Department of Labor, 1969). The budget includes not only outlays for private goods and services but also the Federal, state and local income taxes which accrue at each budget level.[1] For homeowners, outlays for shelter include local and state property taxes which must be paid. Market prices reflect sales and excise taxes payable in each community.

Examination of spending by category reveals that shelter and transportation costs account for most of the variance in expenditures across cities. These differences stem both from differences in prices and differences in market baskets.[2]

The variance of living costs among communities is highest for the high budget standard, and lowest for the low budget standard. Smeeding (1974) extrapolates the results to argue that the truly poor experience little variation in the set of prices they face.

The issue of whether to adjust income for regional price differences is complicated by the inclusion of taxes in one version of the published budgets and indices. Obviously, a deflator which includes the effect of taxes should not be used on post-tax income measures. It has been argued that local indirect taxes may be a good proxy for the

[1] To be more exact, the bundle of goods is first priced to determine total expenditures in each locality. Federal and state tax schedules are then used to calculate the pretax income-level required to yield after tax income equal to total expenditures.

[2] For instance, mode of travel varies among cities. Residents of some cities utilize public transportation more than others, and the weights chosen for public versus automobile transportation reflect actual utilization patterns.

benefits received from local public expenditure (Tiebout, 1956; See Section 4.5). While this may be true for a community as a whole, it ignores the substantial redistribution of income that occurs within communities between more and less affluent members.

No consensus has emerged on the issue of deflating income on the basis of regional cost of living differences. A summary of work in-this area may be found in U.S. Department of Health, Education, and Welfare (1976b).

Summary

There are three types of differences in family circumstances which may affect the economic well-being afforded by a given level of command over goods and services:

- family size differences
- urban/rural differences in the cost of living
- regional differences in the cost of living

Clearly some adjustment is required for differences in family size. The choice is between a simple division by family size and a more complex adjustment which attempts to allow for economies of scale in consumption. Even though the issue is not resolved, the weight of the evidence suggests that there are economies of scale in consumption; the SSA poverty index is probably as good as any for adjusting *for* this factor.

Urban/rural differences, as reflected in the poverty index, are attributable mainly to the in-kind income from home produce of rural families, which means that they require less money income to be as well off as their urban counterparts. This adjustment is not required if the value of food and fuel produced and consumed on farms is included in the income.

Regional differences in the cost-of-living, as reflected in the Bureau of Labor Statistics estimates for urban families, are attributable primarily to differences in state/local taxes and differences in shelter costs. Since shelter costs are influenced heavily by differences in property taxes, the major factor accounting for regional cost-of-living differences appears to be state and local taxes. In Chapter 4 it was argued that such taxes may approximate the level of real benefits publicly provided.

If the income concept used does not include these benefits, then it would be inappropriate to deflate the income measure by a regional cost of living index. On the other hand, if locally provided public benefits have been included in income, then a deduction of state and local taxes paid is the appropriate correction to make. In either case, deflation of income should be based on the set of prices which the individual recipient unit faces (including the tax price of public benefits). This varies so much by income level that any overall measure of the cost of living for a community will be a poor proxy for individual cost of living indices.

5.3 Combining Income and Wealth

In earlier sections, it has been asserted that the income from wealth (i.e., net worth), whether actual cash income or imputed, should definitely be included in any measure of economic well-being. However, consideration should also be given to the impact of wealth itself on economic well-being, aside from the income which it generates.

Certainly, wealth (aside from liquidity problems) is available to the economic unit for use in purchasing goods and services, just as is current cash income. Consider two units identical in every way (including the receipt of identical current incomes) except that one is wealthier than the other; surely, the wealthier one has a higher level of economic well-being. That economic well-being is a function of wealth has long been recognized by welfare programs, which essentially require that all wealth above some small, exempt amount be consumed before an economic unit is eligible for assistance. In constructing a meaningful measure of economic well-being, it is indeed difficult to ignore the impact of wealth.

If income and wealth were distributed in more or less the same way, it might be appropriate to exclude wealth from the economic well-being measure on the grounds that the relative ranking of economic units would be unaffected by the exclusion. However, virtually all the available evidence suggests that the distribution of wealth is much more skewed than the distribution of income. (Smith and Franklin, 1974; Smith, 1975). Thus, assuming that economic well-being is a function of wealth, exclusion of wealth altogether would have a distorting effect on the measured distribution of economic well-being.

In order to include both wealth (a stock) and income (a flow) in one measure, some adjustment must be made to make the two commensurable. Weisbrod and Hansen (1968) have proposed that net worth be transformed into a flow by solving for the annual return generated by an annuity equal in value to net worth; in this form, net *worth* could be added to income to obtain a measure of economic well-being. The authors suggest that the annuity period be equal to the remaining life expectancy of the adult members of the economic unit. Since the annuity calculation includes an interest return, the authors note that current income from wealth should be excluded from income to avoid double counting. If income from assets is included explicitly, the Hansen-Weisbrod procedure can be modified so that an amortized value of wealth, which assumes a zero rate of return to wealth, be added to income. The amortization rate should be a function of the life expectancy of the adult members of the family but should be subject to a maximum amount so as not to imply that wealth need be completely exhausted in any one year.

One objection to this treatment is that it biases income measures for owners of relatively more non-human than human capital. Since younger people tend to have relatively more human capital while older people have relatively more non-human capital, this would tend to yield higher well-being scores for older people. Of course, the ideal solution would be to include human capital in the wealth measure. However, there are serious problems in deriving acceptable estimates of the value of human capital. Furthermore, because of the uncertainty attached to future income streams from human capital and imperfections in the capital market, there are severe limits on the degree to which human capital can be used for current consumption; much less serious restrictions apply to the use of non-human capital. In order to achieve inter-generational equity, an age-related adjustment might be considered which would attach lower weights to wealth, the older the economic unit, to offset the unequal treatment of non-human capital.

Another possible objection is that, ceteris paribus, the wealth amortization calculation would assign a higher well-being measure to the saver.

For example, consider two individuals with identical lifetime income flows and the same wealth at birth. Assume that one consumes his entire current income each year while the other saves a portion of his income each year. The saver would be assigned a higher well-being measure in every year after the first because his current income would be identical to the spender's, but his wealth would be higher. In any given year or multi-year period short of a lifetime, this ranking would be consistent with the working definition of economic well-being (i.e., the potential ability, whether exercised *or* not, to demand goods and services).

The inclusion of amortized wealth in a means test for a cash or in-kind transfer program could raise problems if it *is* truly difficult for the recipient to dispose of property (i.e., if it is very illiquid) and/or the disposition of property would impose a real hardship (e.g., sale of home by a low income, elderly person.[1] One solution to this problem is simply to have generous and, perhaps, categorical exemptions. Another solution would be for the government to consider a portion of the transfer payment to be a loan to the recipient, secured by the recipient's wealth (e.g., the government could obtain a second mortgage on a home); the loan would be due at the death of the recipient,

Epstein and Murray (1967), in reporting on the 1962-63 Survey of the Aged Population use a concept of potential income. They define #is to be money income less income from assets plus the portion of asset holdings that would be available for spending annually if all assets were prorated over the average remaining years of life of the unit, with a 4 percent annual return, Assets include financial assets, and equity in a home, farm, business and real estate. It does not include the cash value of life insurance or annuities, automobiles and personal effects, or the accrued rights to payments from a retirement plan. It is a variation of the Hansen-Weisbrod annuitization method,

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[1] Fisher (1963) and Morgan (1965) question the appropriateness of imputing benefit to the income from an aged homeowner's equity. The latter notes that "older people in the United States have far more housing than they need, are unwilling to give it up, and may well be allowing it to run down or become obsolete as a hidden (socially acceptable?) method of dissaving, (Imputed rent) probably exaggerates their level of well being." (p. 14)

Projector and Weiss (1969) criticize the annuitization approach. They stress that the appropriate method of combining income and wealth will depend on the use of the measure for analysis or for program eligibility determination. For the latter purpose, including assets would create incentives to dissave among the potentially eligible population. For analytic purposes, the use of the measure to compare young and old families will be sensitive to the specification of both life expectancies and the rate of return available to each group. Younger families would normally be expected to hold asset portfolios with higher expected returns than older families (see Tobin (1958) on the relationship between expected return and risk, and the factors affecting each individual's choice among these).

5.4 Adjustment for Leisure

Families and individuals enjoy very different amounts of leisure, depending on their circumstances. Ignoring this difference may result in a biased measure of economic well-being. Certain income concepts, such as potential income (discussed in Section 3.1) and earnings capacity (Section 4.4) automatically include the value of leisure time by valuing all available time at the appropriate wage rate. Most income concepts, however, ignore leisure; therefore a separate adjustment is needed if the amount of leisure time is to be incorporated into a measure of well-being.

Morgan et al. (1974) construct a measure of well-offness (sic) by the geometric average of the ratio of income to needs and the leisure time of the head and spouse. In fact, several distinct indicators of well-being are constructed by the authors:

1) Earnings of the head of household
2) Taxable income of the head and spouse
3) Total family money income
4) Patio of money income to needs
5) Well-offness (as defined above), using money income
6) Net real income (defined below)

7) Ratio of net real income to needs

8) Well-offness, using net real income

9) Well-offness, using net real income less costs of commuting

10) Well-offness, using net real income - housing costs, divided by food needs

11) Expenditures for food, divided by food needs

Of these measures, earnings (#1) has been discussed in Section 3.1, taxable income (#2) in Section 4.1. The needs measure (#4) is constructed based on food needs according to the age and sex'of family members. This figure is then multiplied by a factor to account for other needs: the factor is larger for small families. This procedure is the same as that used to construct official poverty line figures.

Leisure time *is the* average leisure time for head and spouse. This is defined as the annual number of hours remaining after subtracting eight hours per day for sleeping, time spent in home production and housework, hours of work, commuting time. For those who are unemployed, eight hours are subtracted for each workday in which the individual was unemployed, For those who are ill, sixteen hours a day are subtracted for the first eight weeks, and twelve hours per day subsequently. (Morgan et al., 1974, p. 15). These procedures insure that individuals suffering a period of unemployment or illness are not credited with disproportionate leisure during the period.

"Net real income", as defined by Morgan et al., is defined as money income plus the imputed value of home production, imputed rent on owner occupied housing, and the value of in-kind transfers, less the cost of child care, union dues, and estimates of federal income tax liability. Measures #6, #7, and #8 are based on this concept.

The final'two measures of well-offness are constructed by adjusting net real income for commuting costs (#9), and by relating net real income less shelter costs to the food component of the needs index. The final measure of well-being considered is simply the ratio of food expenditures to food needs.

Using data from the Panel Study of Income Dynamics, Morgan et al. show that the correlations between the well-offness indices are quite high, ranging from .92 to .99. However, correlations between money income and the various well-offness measures are considerably lower (in the range .54 - .71). Also the variability[1] of well-offness measures is approximately one-third that of the income measures. Thus an adjustment for leisure reduces the apparent inequality of well-offness considerably below the inequality of money income. There remains one group, however, who consume leisure disproportionately -- the retired population. How should one treat them? Sociologists investigating retirement differ in their findings regarding satisfaction with increased leisure. Some argue that increased leisure creates anxiety and loss of a sense of personal worth (Miller, 1965), whereas others view most retirees as benefitting from increased personal freedom to pursue hobbies and personal interests (Atchely, 1971).

Not surprisingly, the extent of satisfaction with retirement is highly correlated with the level of income. The retired poor, like all others in poverty, tend to be dissatisfied with their lot. Thus the value of a unit of leisure may itself be a function of money income. To attempt to adjust a measure of economic well-being for pure leisure (not to be confused with home activity) may incorrectly impute satisfaction which does not exist.

5.5 Summary

In a recent paper, Taussig (1976) reviews many of the criticisms of existing data on income and wealth, and summarizes the recent work of others who attempt to make a determination of the trend in inequality of well-offness (well-being) in the United States. On the income measure itself, he notes that there is no adequate data on the distribution of fringe benefits, home production or leisure. Taussig recommends that comparisons of analytic units be restricted to narrowly defined cohorts, according to the age of the household head. He suggests in this context that a lifetime income accounting measure is an appropriate basis of

[1] Variability = standard deviation/mean

comparison for young people, but current (money(?)) income should be used for the aged.;, A new household survey should provide joint data on income, consumption, wealth, and family composition. In addition to expanding the income concept to include home production, leisure, and imputed income there should be an attempt to include social indicators, such as the number and length of vacations, the presence of roomers or boarders in the home, central heating, air conditioning, etc.

In this latter context, Stanley Lebergott (1976) presents some statistics which would seem to indicate that researchers, in their fascination with abstract technical problems of imputation and valuation, may have missed seeing the forest for the trees. He notes that the number of non-farm workers taking vacations has increased from six percent in 1901 to eighty percent in 1970; that the number of homes with running water rose from twenty-four percent in 1890 to ninety-eight percent 'in 1970; and that electricial lighting rose from three percent in 1900 to near universality today. As Taussig notes,

> all these estimates give us information about trends in certain aspects of inequality that cannot be obtained from conventional data sources on total family income. (p. 56)

In the introduction to their forthcoming book, Augmenting Economic Measures of Well-Being (1977), Marilyn Moon and Eugene Smolensky point out that the birth of a child lowers some measures of economic well-being, leaves others unchanged, but never raises a one! Staying in school an extra year, or staying home in preference to working, *never* increases any common measure of income. How can our concepts of economic well-being be brought into conjunction with the common sense view that these are positive, welfare increasing events?

In addition to research designed to support alternative concepts of well-being which would yield consistent answers to the above conundrum, the authors suggest that research be directed toward estimating the benefits of government expenditures, toward determining the relationship of local. taxes and local government spending, and a greater inclusion of the findings of scholars studying tax incidence in the construction of income and well-being distributions.

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