Income-Net Worth Measures of Economic Welfare

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STUDIES OF THE economic position of consumers have long recognized that families with the same current income may differ widely with respect to the amount of wealth they own. It is common practice to speak of the wealthier family as "better off" than the less wealthy. Moreover, welfare programs reflect the philosophy that assets should be taken into account in evaluating eligibility for assistance because it would not be acceptable public policy to aid families who have substantial amounts of assets. In this tradition, various efforts have been made to develop a summary measure of economic welfare that would incorporate both income and assets. One measure that has been proposed involves adding current income, other than yield from net worth, to the life annuity a family or individual could purchase if it used all its wealth in that manner. Such a measure of economic welfare has most recently been advocated by B. A. Weisbrod and W. L. Hansen, who describe it as operationally feasible and broader in scope than the traditional money-income measure.[1]

This proposal raises two important questions: Is a measure of economic welfare that incorporates net worth necessarily better than an income measure? Is a measure of economic welfare that spreads net worth evenly over the remaining life span better than a measure that incorporates net worth in some other fashion? It is argued here that a measure of economic welfare cannot be evaluated unless the purpose the measure is to serve is enunciated. To put the matter another way, it is doubted that an all-purpose measure of economic welfare is useful or desirable.

This article first presents a brief evaluation of the income-net worth concept with respect to two of the important purposes for which a measure of economic welfare might be used: (1) as an index of ability to pay taxes and (2) as an index for determining the extent of need, the composition of the population classified as poor, and who should receive subsidies under various welfare programs. This is followed by a discussion of some conceptual problems that arise when income and net worth are combined.

INDEX OF ABILITY TO PAY TAXES

The literature on equity in taxation deals at length with the question of definition of a measure of economic welfare. R. A. Musgrave[2] says that an objective index of equality is needed to assure both horizontal and vertical equity in the tax system and notes that income and consumption are possible alternatives. Other writers[3] have discussed net worth as a possible index of taxable capacity.

According to Musgrave, if income is chosen as the base for the index, the concept that has gained "increasing acceptance among fiscal theorists is that of total accretion. Income is defined to equal consumption during a given period, plus increase in net worth . . . all accretions to wealth are included, in whatever form they are received or from whatever source they accrue."[4] Thus the total accretion concept of income would include imputed rent on owner-occupied homes and capital gains and losses, both realized and unrealized, as well as the items usually included in money income (wages and salaries, dividends, interest income, etc.).

If the concept of total accretion income is chosen as the index, then it is not necessary from an equity point of view to take assets into account

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[1] B. A. Weisbrod and W. L. Hansen, "An Income-Net Worth Approach to Measuring Economic Welfare," *The American Economic Review*, December 1968.

[2] R. A. Musgrave, *The Theory of Public Finance*, McGraw-Hill Book Co., Inc., New York, 1959.

[3] E. R. Rolph and G. F. Break, *Public Finance*, The Ronald Press Co., New York, 1961.

[4] R. A. Musgrave, *op. cit.*, page 165.

in the index of equality. On this point of equal treatment of equals Musgrave is persuasive:

> If all accretions to wealth are taxed under the income tax, any part of a person's net worth, whatever the particular form in which it is held, has been subject to tax at some past date when the accretion occurred. This being the case, there is no place for a further tax on the holding of property as such.
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> . . . a property tax may be called for on other grounds, but it is not justified in terms of horizontal equity based on accretion.[5]

The concept of taxable income under the Federal income tax departs from the theoretical concept of total accretion. Those with a given amount of income in the form of capital gains or interest from State and local bonds, for example, pay less income taxes than those with wage and salary income. But does it follow that introduction of a tax on assets will result in a more equitable treatment? Consider two consumer units who receive the same amounts of income over a certain period and pay the same amounts of taxes on that income—one saves and one does not. Introduction of a tax on assets will result in larger taxes for the saver than for the nonsaver. Is this a more equitable treatment than one under which both units pay the same amount of tax?

Any change from the current concept of taxable income, whether it is inclusion of assets or of forms of income not presently taxable, will result in changes in capital values, in changes in the ranking of consumer units by after-tax income, and probably in changes in the measures of the equality of the income distribution. Whether one set of changes is preferable to another, or whether any set of changes is preferable to no change at all, will depend on one's value judgment about the particular shifts involved. It is entirely conceivable that the sets of changes resulting from a broader concept of taxable income would be more acceptable to a larger number of people than would the set of changes associated with taxation of assets.

INDEX OF NEED

It is common practice for welfare programs to take assets into account in determining eligibility for assistance. A combined measure of income and assets has also been proposed for income-maintenance programs. The argument is that those who have saved ought to use up some or all of their assets before they receive public assistance and those who have not saved should receive assistance immediately because they are in need and have no assets to draw on. Presumably, this argument also says that those who are heavily in debt stand in greatest need. By virtue of its penalty on saving, the practice of taking assets into account in judging need has implications for saving behavior that are not always recognized. If assets are included in the index of need, those consumer units who are likely to become welfare clients will have less incentive to save, and, if negative assets (debts) are included, more incentive to borrow. In connection with a welfare program that guarantees a minimum consumption level, along with acquisition of the consumer's assets in full, P. A. Diamond observes: "It is only consumers reasonably confident of avoiding welfare who have an incentive to save. For someone who will end up on welfare anyway, all that savings accomplishes is a delay in the date at which this will occur."[6]

The College Scholarship Service (CSS) procedures for determining parents' ability to contribute to the cost of a college education take into account both assets and income. In doing so, the Service recognizes that:

> Any system that analyzes financial need must deal first with the objective facts of family financial circumstances. It cannot make distinctions between the frugal poor and the spendthrifty. It cannot distinguish between improvidence and financial tragedy. It must be based on the assumption that an applicant and his family are simply accepted in their present financial condition.[7]

PROBLEMS OF COMBINING INCOME AND NET WORTH

If financial condition is defined to cover both income and assets, then clearly the index of need

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[5] R. A. Musgrave, *op. cit.*, page 175.

[6] P. A. Diamond, "Negative Taxes and the Poverty Program—A Review Article," *National Tax Journal*, September 1968, page 299.

[7] College Scholarship Service, *Manual for Financial Aid Officers. Part Five: Need Analysis* (1967 Edition), page 1.

must include assets. There remains the question of how income and net worth should be combined to yield the index of need. Weisbrod and Hansen suggest several possibilities, including spreading net worth over an infinite period. Such an approach would be equivalent to measuring economic position solely by current money income. But the measure they present spreads net worth evenly over the remaining expected lifetime of the consumer unit.

If the analysis is limited to consumer units of approximately the same age, there is no way of judging a priori whether spreading net worth evenly over the remaining life span is better or worse than some other way of treating net worth. It depends on the purpose of the measure. When the analysis is extended to consumer units of widely different ages, differences in life expectancy are relevant, along with a host of other factors such as the life-cycle patterns of spending and saving. But again it does not follow that spreading net worth evenly over the remaining life span is better than some other way of treating net worth. The College Scholarship Service, for example, rejects the simple annuity method because of the burden it would place on older parents.

Some of the properties of an income-net worth measure for consumer units of a given age are discussed first and then the problems of commensurability when a wider age range is considered.

Consumer Units of a Given Age

If the income-net worth measure is used as a device for ranking consumer units from low to high economic status, it may make little difference whether one buys a life annuity with net worth or spreads net worth over some other time period. Total net worth, for example, differs from annuitized net worth only by a factor of proportionality related to the interest rate and to the period of the annuity. To the extent that net worth is an increasing function of earnings,[8] a ranking by current earnings plus annuitized net worth will tend to approximate a ranking by current earnings and total net worth. Differences will depend on the closeness of fit between net worth and earnings (in a linear relation on the degree of correlation).

Ranking is not, of course, the purpose of most undertakings for which a measure of economic welfare is wanted. Most often, one needs to show how much better off one consumer unit is than another in determining dispersion and in comparing with predetermined standards—eligibility standards for assistance, for example. Even if earnings plus total net worth would yield the same ranking as earnings plus annuitized net worth, the period of time over which net worth is spread can make a difference in the absolute level of the measure and in the relative distance between two consumer units in the rankings. Thus such measures of dispersion as the Lorenz curve will be different. The differences will depend on the form of the relation between net worth and earnings and the size of its parameters and on the factor of proportionality. But the fact that there may be differences between the two measures of economic welfare does not lead to a conclusion as to which is preferable.

Consumer Units of Different Ages

Attempts to compare the net worth of consumer units of widely different ages must take into account not only differences in remaining life expectancy, but also life-cycle patterns of spending and saving. Weisbrod and Hansen say that an older unit is "better off" than a younger unit with the same current income and net worth because the older unit has fewer years over which to spread a given amount of net worth. The College Scholarship Service, however, finds the younger unit "better off" than the older because the assets of the younger unit will continue to grow and those of the older unit will not.

This difference may be pointed up by considering a consumer unit with the head aged 40, having $8,000 in current earnings and $15,000 in net worth. The 40-year-old can purchase a life annuity of $839 with his $15,000 net worth, assuming a 4-percent interest rate and a life expectancy of 32 years. A 60-year-old would need

[8] For evidence that net worth is an increasing function of current income, see Dorothy S. Projector and Gertrude S. Weiss, *Survey of Financial Characteristics of Consumers* (Board of Governors of the Federal Reserve System), 1966, pages 5–8; see also Dorothy S. Projector, *Survey of Changes in Family Finances* (Board of Governors of the Federal Reserve System), 1968, page 88.

$9,776 to purchase a life annuity of $839, assuming a 4-percent interest rate and a life expectancy of 16 years. Hence, if both units have $8,000 in current earnings, the 40-year-old with $15,000 net worth and the 60-year-old with $9,776 are equally well-off, according to the Weisbrod-Hansen measure. Or, a 60-year-old with $15,000 net worth is "better off" than a 40-year-old with $15,000.

The College Scholarship Service, in contrast, recognizes that:

> The 40-year-old has many years of working life remaining in which he can add to his assets from future savings, and it is probable that his present assets will increase in value during that time. On the other hand, the individual at age 60 has normally reached the peak of his earning power, and his assets have little if any potential for increase. The later part of the life cycle is normally one of asset reduction rather than of asset growth.[9]

If the unit that is headed by the 40-year old with current earnings of $8,000 a year receives income and saves in accordance with the pattern of older units, then its net worth would amount to about $34,000 by age 60.[10] Perhaps then, the 40-year-old with $15,000 net worth and a 60-year-old with $34,000 should be considered equally well-off. The College Scholarship Service procedures follow this line of reasoning and thus find a 40-year-old with $15,000 net worth "better off" than a 60-year-old with $15,000.

The main point of this example is to show that greatly different conclusions about the relative position of the aged may be obtained, depending on how one regards the past and the future. The College Scholarship Service approach accepts the past as a given (indeed, any measure incorporating assets does) but regards the future of younger units as relevant in comparing them with older units. More generally, an income-net worth measure that incorporates plausible assumptions about future income and consumption of young units will show that, on the average, young units will have substantial increases in net worth in the period before the retirement years. If the saving rates shown in table 1 are used as a basis for prediction, younger units—when they reach the age of the older units—will, on the average, have accumulated net worth at least equal to that of the older units. The Weisbrod-Hansen measure leads to the conclusion that the aged are considerably "better off" than the current income measure shows; it produces that result because it does not take into account the savings potential of young units.

TABLE 1.—Characteristics of consumer units by age of head

Age of head in 1962	Average earnings, 1962 [1]	Average income, 1963	Saving		Average net worth December 31, 1962
			Average, 1963 [2]	As percent of income	
Under 35	$5,475	$6,468	$728	11	$5,798
35–44	7,130	8,207	732	9	15,535
45–54	7,453	8,456	1,114	13	21,871
55–64	5,908	6,452	492	8	32,124
65 and over	3,180	3,714	−38	−1	30,684

[1] The sum of wages and salaries, business income, and pensions and annuities.

[2] The *Survey of Changes in Family Finances* concept of saving less net purchases of automobiles.

Source: Average earnings from Dorothy S. Projector, Gertrude S. Weiss, and Erling T. Thoresen, "Composition of Income as shown by the Survey of Financial Characteristics of Consumers," *Six Papers on the Size Distribution of Wealth and Income*, National Bureau of Economic Research, 1969. Average income and saving from Dorothy S. Projector, *Survey of Changes in Family Finances*, Board of Governors of the Federal Reserve System, 1968. Average net worth from Dorothy S. Projector and Gertrude S. Weiss, *Survey of Financial Characteristics of Consumers*, Board of Governors of the Federal Reserve System, 1966.

[9] College Scholarship Service, *op cit.*, page 8.

[10] The estimate assumes a 4-percent interest rate, the pattern of change in earnings shown in column one of table 1, and the saving/income ratios shown in column four. It does not allow for any secular growth in earnings due to productivity increases.