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A Note on the Hicksian Concept of Income

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INTRODUCTION

The question "what is income?" has preoccupied economists and policymakers for a long time. Rulers have always been interested in an income concept that can be used as a yardstick for taxation (Musgrave 1985). In the twentieth century, the emergence of demand management policies and national income accounting also brought substantial government involvement in developing concepts of income. Economists have been deeply entangled in developing concepts of taxable income, personal income, and national income in various capacities: as theoreticians, policymakers, and government bureaucrats (Kendrick 1970, Usher 1987).

Concepts of personal income and national income used by most government agencies and economists today have been often compared to the so-called Haig-Simons-Hicks (HSH) concept of income (Haig 1921, Hicks 1939, Simons 1938). Implicitly or explicitly, this concept is usually considered *the* theoretical concept of income. According to the HSH definition, income in a given period of time is the maximum amount that can be consumed in that period while keeping real wealth unchanged. The 1993 System of National Accounts (1993 SNA), the landmark publication on national income accounting put together by prominent international organizations such as the United Nations, expressed the widely-held view that, "from a theoretical point of view, income is often defined as the maximum amount that a household can consume without reducing its real net worth." (1993 SNA, Section 8.15, p.186). The HSH concept is accepted as the theoretical concept of income even by some critics of the official income statistics: "The theoretical Hicks-Haig-Simons concept of income is that which we can consume while keeping our real wealth intact. But this is a far cry from the usual measures of individual incomes, corporate profits or the aggregates of personal and national income." (Eisner 1989, 2). In the field of household income statistics, a recent study aimed at developing a uniform definition of household income for

the purposes of international comparisons took as its theoretical starting point the HSH concept (Smeeding and Weinberg 2001, 2).

Given its pervasive influence, it is useful to examine the original context in which the HSH concept was constructed. Of the three architects, Hicks was arguably the one who made the most theoretically sophisticated contribution to the concept. Accordingly, in this note, I examine Hicks's (1939) discussion of income concepts in its original form–chapter 14 of *Value and Capital* . In order to limit the scope of the discussion, I will abstract from problems of depreciation in any form and focus largely on issues relevant to personal or household income.

At the outset, it is useful to recall a remarkable feature of Hicks's discussion that appears to have been ignored in the subsequent literature. Chapter 14 was placed before Part IV of the book, where he purportedly developed a theory of economic dynamics without using the concept of income (whether that of an individual or of an entire nation), as well as related categories such as saving, investment, and depreciation. The explicit purpose of the chapter was to justify this procedure. This justification took the form of a demonstration that the concept of income was theoretically vacuous. It cannot be defined unequivocally and any operational definition of income involves a great deal of imprecision. The notion of a "theoretical concept of income" was for Hicks a contradiction in terms. It is paradoxical that, given this feature of Hicks's arguments, later economists tend to locate *the* theoretical concept of income here. [1]

THE "CENTRAL MEANING"

Hicks started out by noting what the definition of income should be for practical purposes and then discussed how economists and businessmen approximate this definition.

> The purpose of income calculations in practical affairs is to give people an indication of the amount which they can consume without impoverishing themselves. Following out this idea, it would seem that we ought to define a man's income as the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning. Thus, when a person saves, he plans to be better off in the future; when he lives beyond his income, he plans to be worse off. Remembering that the practical purpose of income is to serve as a guide for prudent conduct, I think it is fairly clear that this is what the central meaning must be. (Hicks, 1939,172).

For Hicks, the motivation for the definition of income is purely subjective, in the sense that such a definition must facilitate "prudent conduct" for the individual. The central meaning of income is also subjective for him in the sense that it is formulated in terms of the individual's expectations. In fact, Hicks considered only subjective definitions of income as theoretically meaningful because only they are relevant for individual decisions. He therefore dismissed ex post definitions as useless for positive theory: ". . . they are of no use to theoretical economists, who are trying to find out how the economic system works, because they have no significance for conduct." (179).[2] It was on the same grounds that he advised positive theoretical economists to avoid the company of those who seek objective definitions of income–such as the income tax authorities (180, n.1). This advice was proffered perhaps in light of (in contrast to?) Keynes' observation in his own chapter on the definition of income in the *General Theory* :

> It will be seen that our definition of *net income* comes very close to Marshall's definition of *income*, when he decided to take refuge in the practices of the Income Tax Commissioners and–broadly speaking–to regard as income whatever they say, with their experience, choose to treat it as such. For the fabric of their decisions can be regarded as the result of the most careful and extensive investigation which is available, to interpret what, in practice, it is usual to treat as net income. (Keynes 1964,59).

The motivation posed by Hicks for an income definition is quite restrictive. The starting premise, taken to be self-evident, seems to be, "Why would I want to know my income unless I want to ascertain the maximum amount that I can consume without going into debt or selling off my assets?" Ruled out are several other reasons why an individual would want to know his or her income, such as how it figures in relation to that of a colleague or neighbor. Even if we focus only on consumption behavior, relative income may be an important factor. Moreover, there is no reason why "prudent conduct" should be defined solely with respect to individual decisions to consume. The central meaning of income as formulated by Hicks is relevant only to personal disposable income. In a modern capitalist economy with employer and employee contributions to social insurance, complex codes of personal income taxation, and substantial government provision of public goods, the motivation for income measurement, even at an individual level, has to be broader than obtaining information relevant to personal consumption expenditures. Indeed, disposable income itself is a derivative concept that can be constructed only from other, more basic concepts of income.

Apart from its restrictive focus, the "central meaning" postulated by Hicks also failed to distinguish between definition and calculation, that is, defining income in such a way so that an individual can calculate what it is expected to be and then as what it actually is. Commenting on the ex ante and ex post concepts of income, George Break observed several years ago: "An entity must be defined independently of expectations before any expectations may be held with respect to that entity." (Break 1964, 59) In contrast to Hicks, James Meade and Richard Stone adopted a purely ex post approach in their pioneering article on national income accounting. Money income is defined there as the maximum amount that *could* be spent on consumption while leaving nominal wealth intact and real income as the maximum that *could* be spent on consumption while leaving real wealth intact (Meade and Stone 1941, 219).

An ex ante concept, irrespective of its theoretical merits, cannot serve as a basis for income measurement if it does not have an ex post counterpart. Even theoretically, it is hard to understand how ex ante values of economic variables can be important for behavior if such values cannot be compared to their ex post counterparts. Nevertheless, as I shall now discuss, Hicks arrived at the rather unsettling conclusion that his ex ante concept of income did not permit, in general, the derivation of ex post counterparts.

THE "THREE APPROXIMATIONS"

Hicks discussed three approximations to the "central meaning" of income defined above (172—175). The first approximation, which he called "Income No. 1," abstracted from changes in the expected rate of interest and prices. It defined income during a year as the maximum amount

that the individual can spent on consumption and still expect to be as wealthy, in nominal terms, at the end of the year as he was at the beginning of the year. Suppose that the opening nominal wealth of an individual is V. Then, with a fixed rate of interest, r, the condition that income, Y, equals the maximum that can be consumed while leaving nominal net worth intact can be stated as:

$$(V - Y)(1+r) = V$$

It follows that:

$$Y = V\left(1 - \frac{1}{(1+r)}\right)$$

In so far as the individual expects the rate of interest to remain unchanged, he will have an income equal to Y in each year. Income for any given year is thus simply the discounted value of the income that could be expected for that year if none of the starting wealth is used for consumption, all income from wealth is reinvested and no change occurs in capital value.[3]

Hicks noted that a "supremely important property" of Income No. 1 is its amenability to objective, ex post measurement. At the end of the year, the income statistician can assess the amounts of nominal wealth that I started and ended with, and therefore, the change in my nominal wealth. Assuming that the statistician can determine the amount of my consumption expenditures from my market transactions, he can add this to the change in my nominal wealth and obtain my nominal annual income (179).

However, argued Hicks, the possibility of objective measurement vanished as soon as a more realistic scenario, in which the individual expects the rate of interest to vary over the planning horizon, is considered. If the rate of interest expected during the second and the subsequent years is higher than the rate of interest expected during the first year, then income expected from the second year onward will be higher than income expected for the first year. However, in such a situation, there is no reason why the individual should attempt to keep his nominal wealth constant from year to year (174). Even if he exhausts some of his wealth in the first year, he can expect to make it up in the subsequent years because of the higher expected rate of interest.

The second approximation proposed by Hicks, "Income No. 2," was meant to be suitable for this situation. If the rate of interest is expected to change, income is defined as the maximum amount that an individual can consume during the year and still expect to consume the same amount in the subsequent years. In effect, this method of calculating ex ante income consists of aggregating the stream of discounted values of expected future income over the planning horizon and allocating the average amount for each year. The logic of this definition precludes an ex post counterpart. What can actually be observed at the end of a year is the person's actual consumption during that year, not his expectations regarding the rate of interest for the remainder of his planning horizon.

Hicks also reached a similar conclusion in the case of a yet another realistic scenario in which the individual expects prices of consumption goods to change in the future (180). In this instance, Hicks argued that income–"Income No. 3"–is defined as the maximum amount that an individual can consume during the year, and still expect to consume the same amount in real terms in the

subsequent years (174). This is equivalent to saying that income is the maximum amount that an individual can consume in real terms while leaving his real wealth intact. Denoting the expected proportionate change in prices by Δp we can express this condition in a similar fashion to the first approximation:[4]

$$(V - Y)(1+r - \Delta p) = V$$

and therefore:

$$Y = V\left(1 - \frac{1}{(1+r - \Delta p)}\right)$$

However, the identity between "Income No. 3" and the conventional HSH concept breaks down if the yet more realistic scenario, in which the individual expects inflation and the *real* rate of interest to be different from year to year, is assumed. Hicks' formulation of "Income No. 3" was designed to hold in the face of both types of variations. Maintaining real wealth constant when the real rate of interest is changing can be ruled out for the same reason that maintaining nominal wealth constant was considered unlikely in the case of variations in the nominal rate of interest. As discussed above, this is the only source of difference between "Income No. 2" and "Income No. 1."

In the more general case, a process of averaging similar to that performed under the second approximation is implied by Hicks' definition. The discounted values of the actually expected stream of real income over the planning horizon were averaged and this average was defined as "Income No. 3" for each year (184). Once again, the individual's expectations are inscribed into the definition itself. An ex post measurement of Income No. 3 is thus impossible since the individual's expectations regarding inflation or the real rate of interest cannot be observed from market transactions.

PROBLEM OF LABOR INCOME

The discussion so far has implicitly considered only one form of income: income from the ownership of financial or physical assets ("property"). The prospects for ex post definitions are completely bleak once income from work is considered.

If an individual expects a constant stream of earnings in the planning horizon, annual income from labor can be simply obtained by arithmetic division, that is, by dividing total expected earnings over the planning horizon by the number of years in the planning horizon (173). This is a simpler version of "Income No. 1." On the other hand, if the expected stream is not constant over time, or if the expected rate of interest or prices were to vary over the planning horizon, matters become more complicated. Hicks did not deal with these complications systematically in the case of labor income. But, the definitions of income proposed by him suggests that in the face of such variations in expected earnings, prices, or the rate of interest, the actual expected stream of labor income needs to be replaced by a hypothetical stream that distributes the present value of the actual expected stream equally over the years in the planning horizon. However, unlike the case of property income, where at least the first approximation has an ex post counterpart, it is impossible to construct ex post measures of labor income for all the three approximations.

Since the logic of the argument is the same for all approximations, it is sufficient to consider the first approximation. Suppose that the only "wealth" I have is my "human capital." In value terms, this must be equal to the present value of my expected earnings. No change in this wealth (say, due to improvements in my education or deterioration in my health that I expect from activities that I engage in during the year) can be directly observed from my market transactions because the valuation of my human capital is a process purely internal to me. Of course, it is not necessary to invoke "human capital" concepts to make the argument–a change in any of the circumstances affecting the individual's expected future earnings is enough to allow for the conclusion. Hicks was aware of this difficulty with respect to labor income as can be seen from his explicit, though passing, recognition that the ex post counterpart of Income No.1 will hold only if ". . . we confine our attention to income from property, and leave out of account any increment or decrement in the value of prospects due to changes in people's own earning power…." (178). Of course, leaving out labor income means that the resulting theoretical concept of income is not applicable to the most preponderant form of income in modern capitalist economies.

CONCLUSIONS

There is really no Hicksian concept of income (at least in *Value and Capital*) that could be used as a theoretical starting point for building a system of income accounting. The "central meaning" of income as formulated by Hicks had a narrow focus and limited scope. The failure to distinguish between definition and calculation also deprived the concept of much operational significance. In order to serve as a basis of income accounting, definitions of income have to be ex post. Hicks considered three ex ante definitions by specifying in different ways what exactly is meant by "consume" and "well-off." As Hicks himself recognized, none of the three definitions have any precise ex post counterparts once both labor and property are considered as sources of income.

It follows that modern national income accounting has little to do with the theoretical concepts of income found in *Value and Capital* . The essential features of this massive enterprise seem to derive from the neoclassical view of what constitutes "production" (Shaikh and Tonak 1994)[5]. Modern statistics of household income also are not founded on these concepts for similar reasons. The fact that modern income statistics do not base themselves entirely upon the income concepts discussed here is, in fact, a virtue and should be recognized as such.

Ex post definitions of nominal and real income that do not correspond to the Hicksian concept can indeed be formulated by removing the latter completely from the anchor of individual subjectivity. Hicks himself considered this possibility and admitted the usefulness of such concepts for normative and descriptive purposes (180). These definitions, however, will hardly be "Hicksian" and will be identical to the definitions by Meade and Stone(1941) (and similar to the ones proposed earlier by Haig(1921) and Simons(1938)). There is in fact nothing Hicksian about the Haig-Simons-Hicks concept of income often alluded to.

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Notes

1. Yet another notable feature of Hicks' discussion of income was its departure from the view that income is fundamentally a flow of utility or satisfactions–the then-standard view of marginalist economists . This should not be surprising given Hicks' vehement rejection of cardinal utility.

2. Unless otherwise noted, the numbers in parentheses refer to page numbers in *Value and Capital* .

3. It should be noted that these assumptions are also necessary for the other definitions. To avoid repetition, I do not mention them hereafter.

4. I take here, for convenience, V as equal to both nominal and real wealth at the start of the

planning horizon.

5. "At the heart of any set of national accounts lies some common definition of production activities. To construct production accounts, one must first distinguish between production and nonproduction activities, and hence between their corresponding actual or imputed transaction flows" .