

## The Role of Economic Concepts of Income in Accounting

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### Abstract:

This paper is devoted to the role of economic income in accountancy with emphasis on the economic income in economic theory as well as in accounting. It includes an introduction to well-known concepts of income in economics such as those advanced by Fisher and by Hicks.

### 1.1 Introduction:

The theory and measurement of business income lies at the heart of financial accounting and the literature on the topic in recent years has been quite voluminous. But to date there does not appear to be a great amount of agreement on the fundamental nature of income, let alone on the precise rules for measuring it in complex business conditions.<sup>1</sup> As Butterworth stated, there is no concept of business income which has general theoretical or empirical support.<sup>2</sup> Grinyer suggested that many accounting theorists will agree with the advice that we should abandon the chimera that we can ever establish a unified conceptual fra-

mework for accounting that will measure operations and value the next financial position of a firm in an uncertain world with incomplete markets.<sup>3</sup>

This paper is devoted to the role of economic income in accountancy with emphasis on the economic income in economic theory as well as in accounting. It includes an introduction to well-known concepts of income in economics such as those advanced by Fisher and by Hicks.

A number of studies have examined the relationship between various accounting and

economic concepts.<sup>4</sup> The classical study in this area was undertaken by J.B. Canning in 1929<sup>5</sup>. In common with many subsequent studies, Canning's central theme of work was income. He considered income to be the fundamental concept of both economics and accountancy. The following quotation reflects Canning's views:

In a late article Fisher says:

*"I believe that the concept of income is without exception, the most vital central concept in economic science and that on fully grasping its nature and interrelations with other concepts largely depends the full fruition both of economic theory and of its applications to taxation and statistics".*

If he had written instead that income is, without exception, the simplest and most fundamental concept of economic science, that only by means of this concept can other economic concepts ever be fully developed and understood, and that upon beginning with this

concept depends the full fruition of economic theory in economic statistics, it would have been equally true and a more significant statement.

Fisher did not object to the extension of his original comments and concluded a review of Canning's book with the following words: "His book points the way to a sounder science of economics as well as better theory and practice of accountancy"<sup>6</sup>. Canning's views on the nature of income were almost identical to those which Fisher had expressed in "The Nature of Capital and Incomes".<sup>7</sup>

He pointed out that accounting reports are not prepared primarily for economists and it is unreasonable to expect them to conform to strict economic principles.<sup>8</sup> However, he did suggest that a consideration of the economic concept of income (as described by Fisher) could assist in the development of accounting theory and practice.



A feature of Canning's work was that he attempted to relate the accounting measures of income and value to the economic concepts favored by Fisher. A number of accounting theorists have studied the role of such economic concepts as part of their analysis of modern accounting theory. Some writers have attempted to use economic concepts to develop measures of income and value which could be included in accounting statements, whilst others have suggested that such concepts may be considered as ideals against which accounting measures can be evaluated.

### 1.2 Income Concepts in Economics:

Despite Fisher's claim that his concept of income clears up all ambiguities and leaves no room for misunderstandings or dispute, there is no generally agreed definition of income in the field of economics. Furthermore, as Jean St G. Kerr stated, "it is evident that there is not one concept of income which is suitable for all purp-

oses or which could be claimed to be the true income for the period. It must be recognized that for the different purposes we need different concepts of income, and in each case a choice must be made as to the concept which is relevant to the use to be made of the income determination, it is the suitability of the concept for the purpose which should be the decisive factor in any choice of a concept of income".<sup>9</sup> Parker and Harcourt agree that "there is no reason to suppose that there is only one useful concept of income".<sup>10</sup>

In economics as in accounting different concepts of income are likely to be useful for different purposes. Information regarding the income of a business is desired by various persons in the community and for varying reasons.

Economists use income measures (1) to explain behavior, (2) to measure the prosperity of the economy, and (3) as a basis for taxation. Accountants use the income information for dif-

ferent reasons such as<sup>11</sup>:

- 1) A mean of measuring the enterprise's performance during a period of time;
- 2) Management evaluation of the business's financial decisions;
- 3) A basis for monitoring and regulating the activities of management by outside persons or agencies, such as banks, creditors, Government, etc.
- 4) Providing financial information to outside parties who wish to use income earned by enterprises as an input to forecasts to be used for decision purposes.

In view of the diversity of these purposes for income measurement, it is not surprising that no single concept has received widespread support. However, the work of Irving Fisher and J. R. Hicks is widely acknowledged to be of fundamental importance in any discussion of income concepts in economics or accountancy.

Fisher defined capital and income in the following terms: "A stock of wealth existing at an instant of time is called capital. A flow of services through a period of time is called income".<sup>12</sup> Income, then, is the flow of services derived from the capital stock. However the measurement of this flow is not without its difficulties. Fisher identified three successive stages of income :

"- Enjoyment or psychic income, consisting of agreeable sensations and experiences.

- Real income measured by the cost of living.

- Money income, consisting of the money received by a man for meeting his costs of living".<sup>13</sup>

Fisher regarded the first – psychic income- as the most fundamental concept and the last –money income- as most closely approximating current usage. But he suggested that real income was likely to be the most practical concept for economic analysis . To Fisher



the flow of services is an abstract psychic experience of the individual mind.

However he accepted that psychic income cannot be measured directly and he proposed going one step behind it to the concept of real income, consisting of those final events which give rise to the inner enjoyments.

Fisher's income concepts are closely related to consumption because they are derived from the enjoyment of the flow of services. This exclusion of savings from the income concept has given rise to much comment, for instance Lindahl wrote: "Irving Fisher's analysis is carried out in masterly fashion, but all his attempts to demonstrate that his concept of income is the usual one and that it is the only logical one must be considered unsatisfactory. In neither popular nor scientific terminology are income and consumption equated; on the contrary, income is generally taken to include savings (either positive or negative); and the crux of

the matter is to decide just what this term savings may be taken to cover".<sup>14</sup>

Lindahl accepted Fisher's proposition that capital value can be considered equal to the sum of the anticipated value of expected future services, discounted at the current risk-adjusted interest rate, but he favored a concept of income which included both consumption and saving. He argued that any appreciation in capital value due to the passage of time can be regarded as a flow of benefit from the capital stock. For any given period during which expectations about future services do not change, this concept of income will represent the current interest charge on the capital value at the beginning of the period. Any portion of this income which is not consumed will augment the capital value at the period-end, and accordingly will represent savings of that period. Thus, consumption and savings of the period equal income expressed as an interest charge. Kaldor pointed out: "In a world in which fut-

ure events were accurately foreseen and there was no uncertainty, income defined would be a measurable concept, it could be inferred from market prices". For that world (i) there would be a single rate of interest, applicable to the discounting of future streams of net receipts accruing from all kinds of capital goods; (ii) the value of capital goods at any point of time would represent the discounted sum of these receipts; (iii) the difference in the value of capital goods between two points of time would be necessary equal to the discounting factor (after appropriate adjustment for any withdrawal of value into consumption during the interval); (iv) the rate of interest would measure the rate at which the stock of capital goods of all kinds would increase in time if none of the benefits accruing from capital goods were utilized for personal consumption. But as soon as we step out of this textbook world this concept of income ceases to be objectively measurable.<sup>15</sup> Expectations may change from period to period and

there is no longer a single rate of interest. The objectivity of the income measure was important for Kaldor as he was interested in income as a base for taxation.

Hicks, whose concepts have been widely discussed in the accounting literature, suggested that "the purpose of income calculations in practical affairs is to give people an indication of the amount which they can consume without impoverishing themselves".<sup>16</sup> The objectivity of the income measure is not so important for this purpose, but nevertheless, it must be operational if it is to be used as a tool of economic analysis.

Hicks, seeking a guide to prudent conduct, defined the income of an individual 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". He regarded this definition as the central criterion, but suggested that "businessmen and economists alike are usually content to employ



one or other of a series of approximations to the central meaning". In this approximation No.1, Hicks used the capital value of prospective receipts as a measure of wealth (well-offness). Approximation No.2 refined the notion of wealth still further and defined income as "the maximum amount an individual can spend this week, and still expect to be able to spend the same amount in each ensuing week". The third and final approximation expressed spending in real terms, rather than in the money terms of approximation No.2. Kaldor pointed out that "Hicks' concepts blur the distinction between capital and income, as neither can be defined in entire abstraction from the other". In Hicks' approach the source or corpus from which the income is derived disappears altogether as a separate entity - capital appears only as the capitalized value of a certain future prospect and income as the standard stream equivalent of that prospect. Capital and income are thus two different ways of expressing the same thing, not two

different things.<sup>17</sup>

Hicks himself was not satisfied with the concepts. After reviewing his approximations to the central criterion and concluding that none of them offered a satisfactory measure, whilst not rejecting the central criterion, failure to find a satisfactory operational measure led Hicks to comment: "We shall advise to eschew income and savings in economic dynamics. They are bad tools, which break in our hands".<sup>18</sup>

Despite Hicks' disturbing conclusion, accounting theorists sought to approximate his central criterion, sometimes using his approximations. It should be pointed out, however, that Hicks was concerned with ex ante definitions, and his conclusions reflected this orientation. He suggested that a theoretically satisfactory ex-post measure of income could be directly calculated, but he rejected it for the following reasons: "Ex-post calculations of capital accumulation have their place in conomic and statis -

tical history; they are a useful measuring-rod for economic progress; but 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”.

However, if accountants are interested in measuring ex-post the economic progress of a business it may not be unreasonable for them to pursue Hicks' concepts.

### 1.3 Economic Income in Accounting

In accounting literature Hicks' concept of income is frequently referred to as “Economic Income”, hereinafter EI, and his approximation No.1 is often used as the basis for mathematical descriptions of the concept. Wealth is normally expressed in terms of capital value of prospective receipts as follows:

$$(1.1) k_0 = \sum_{t=1}^{\infty} \frac{c_t}{(1+i)^t}$$

is the Wealth at  $k_0$  where time 0, and  $K_1$  the wealth at time 1,  $C_t$  is the flow of net benefits receive from capital in period  $t$  and  $i$  is the market interest rate, the net benefits ( $C_1, C_2, C_3.. C_t..C$ ) are assumed to be measured in money units at the end of each period. Using Hicks' approximation No.1, income in period 1,  $Y_1$  can be measured as follows:

$$(1.2) Y_1 = C_1 + (k_1 - k_0)$$

The net flow of benefits from capital,  $C_1$ , is augmented by the increase in wealth during the period (or alternatively reduced by any decline in wealth). Equation (1.2) satisfies Hicks' first approximation: “the maximum amount which can be spent during a period if there is to be an expectation of maintaining intact the capital value of prospective receipts (in money terms).

This measure of income can be expressed in an alternative form: using equation (1.1) and an equivalent expression for



K1, equation (1.2) can be rewritten as follows:

$$c_1 + \sum_{t=2}^{\infty} \frac{c_t}{(1+i)^{t-1}} - \sum_{t=1}^{\infty} \frac{c_t}{(1+i)^t} = (1.3) \quad y_1$$

This equation can be reduced to:

$$i \sum_{t=1}^{\infty} \frac{c_t}{(1+i)^t} = i k_0 = (1.4) \quad y_1$$

Therefore income in period 1 is simply the market return of the initial capital stock. Thus Hicks' concept of income is equivalent in a world of certainty and perfect capital markets to Lindahl's notion of income as an interest charge.

The above treatment of the capital stock relies on the assumption that future receipts are certain, or at least, that expectations about future receipts remain unchanged during the period under consideration. However these conditions are unlikely to hold in reality. If the expectations do change there are two alternative models of income measurement.

a) Income Ex Ante: As Tom Lee (1982) pointed out: "The ex-ante model reflects Hicks' guide to prudent conduct for it measures the expected income of the period as a proportion of the anticipated realization for the same period".<sup>19</sup>

Ex Ante income can be identified as:

$$+(\bar{k}_t - k_{t-1}) = (1.5) \quad Y_e$$

Where  $\bar{c}$  is the expected realized cash flow for the period t-1 to t anticipated at time t-1,  $\bar{k}_t$  is the closing capital at t but measured at t-1 and  $k_{t-1}$  is the opening capital at t-1 and measure at that point of time. Income is therefore estimated before the event, so that the individual to whom it relates has some idea of how much he can consume during the coming period and how much he

should reinvest of cash flows he anticipates he will receive during the same period. Accordingly we can say that  $\bar{K}_1$  and  $\bar{C}_1$  are both based on the expectations held at the beginning of the period.

b) Income Ex Post: The alternative economic model assuming a world of uncertainty produces income ex post. This income measure is based on expectations held at the end of the period. Now, it is necessary to specify  $\bar{K}_0$  the initial endowment of wealth revised to reflect the expectations held at the end of the period. In this case  $C_1$  is known because it has been realized during the period. Therefore ex post income  $Y_p$  can be expressed as:

$$c_1 + (k_1 - k_0) = (1.6) Y_p$$

The major element in this model which distinguishes it from the certainty model (ex ante model) is the possibility of changes in expectations. If some new information is forthcoming and leads to reassessments of the future streams of

benefit, then wealth expressed as the capital value of prospective receipts must be revised.

#### 1.4 The Role of Economic Income in Accountancy:

A number of writers have suggested that economic measures of income and value might be considered as "Ideals" against which accounting measures may be evaluated.<sup>20</sup> Other writers have applied economic measures to support a particular accounting approach.<sup>21</sup>

However, the role of economic income as benchmark has been criticized particularly under conditions of uncertainty.<sup>22</sup> Arnold and Elazma summarized two of the grounds for criticism: "The first is that economic measures are based on estimates of future cash flows and discount rates which can not be objectively verified. The second criticism is that the pattern of income which results from applying the economic income model places undue emphasis on recognizing the opportunity of realizing gains



rather than on the production or sale involved in their realization".<sup>23</sup> Edwards and Bell suggested a further reason for rejecting the economic concept of income (which they called subjective profit) as follows:

"The measurement of such income is based on expectations about future flows of benefits which must reflect decisions already taken about such factors as the uses to which assets can be put, price-cost relationships and so on. Accordingly the income measure will have no use in the management planning process, as income cannot be measured until the plans are finalized".<sup>24</sup>

In the evaluation of any income concept it is essential to consider the purpose of the measurement. Unfortunately, little consideration has been given to such purposes by many writers who propose economic income as an ideal measure.

In general, economic income appears to be advanced by writers who believe that it is, in some sense, the correct and logical concept of income. As Goldberg pointed out "... the definition of income as given by J. R. Hicks -a definition which has been widely adopted, both implicitly and explicitly, and often without question, in accounting and economic writing, even though Hicks himself pointed out its impracticality."<sup>25</sup>

Recently, some attempts have been made to use economic income as an ideal against which accounting alternatives can be evaluated. Revsine for instance, suggested that economic income could be regarded as an ideal measure because it reflects the company's future distributable flows and its publication would provide a lead-indicator of such flows. He argues that the typical investor needs information about future dividends and furthermore: "since future distributable operating flows are thought to be a prime determinant of future

dividends, this improved ability to predict distributable operating flows (resulting from the publication of economic income) would simultaneously enhance users' predictions of future dividends".<sup>26</sup>

Arnold and Elazma adopted a similar approach. They argued that economic income is useful (in an ideal sense) to shareholders for the purpose of prediction and control in their investment decision taking<sup>27</sup>; and emphasized that "... the reported figures would not, of themselves, enable unambiguous statements of the company's predictions to be made, they would provide input to the shareholder's model for estimating the company's expectations".

It is in this sense that they regard economic income as an ideal or benchmark to be used in the evaluation of accounting alternatives. It is generally agreed that a direct measurement of economic income is impracticable for accounting purposes because it requires subject-

ive evaluation of benefits.

### 1.5 Conclusion:

It is important to recognize that the concepts of income which exist in the literature of economics have provided background thinking for accounting theorists, so that they have to be understood if one is to interpret adequately the thinking of many researchers; and the same goes for the concept of economic income, from which most of the thinking of this paper is derived; various approaches to the problem of choosing between alternative measurements of income have been found in the accountancy literature.

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