The Convergence of Economic and Accounting Concepts of Income

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Abstract

One of the most disputed areas of contention between professional accountants and economic theorists is the divergence between their respective definitions of income. Generally, an economist views any accretion to net worth as income, while the accountant defines income to include only those increases in net worth that result from a realization event, i.e., a sale or exchange. Recently, however, the professional accounting community has begun an attempt to redefine its own measure of income. The following article reviews the controversy, as well as analyzing the struggle for a new measure of accounting income.

Introduction

Financial accounting can be viewed as a descriptive, perhaps analytical science, that has as its objective the identification and measurement of the transactions and events that constitute economic activity. To achieve this end, financial accounting must not only properly measure and classify the data, but condense it to such a degree that it is understandable by the general reader. The resulting financial statements must not be an arcane assembly of data comprehensible only to professional accountants. Indeed, financial statements should, to the fullest extent possible, be identical with economic reality. Because the concept of income is so important in economic theory, the data collected, measured, and presented for actual economic entities should conform as closely as possible to the theoretical definition of economic income. There should be, in other words, no meaningful divergence between what the accountant is trying to measure, and what the economist says should be measured. The actual divergence in reality, and the accounting profession's attempt to narrow the divergence, is the subject of this paper.

Definitional Problems: The Economic Concept of Income

One of the better definitions of income preferred by the economics profession is given by J.R. Hicks(1). Under his view, income is defined as the maximum value that an entity can consume during a period and still be as well off at the end

as at the beginning. In other words, net income can be measured by subtracting beginning net assets (gross assets less liabilities) from ending net assets and adjusting for changes in investments in the entity by its owners or benefactors. The assumption here is that assets are measured at current fair market values, rather than at historical costs.

The foregoing economic definition of income can be found in both the practical world of accounting as well as in its more theoretical side. For example, the U.S. Internal Revenue Service, the IRS, uses the concept in its audit process, referring to it as the "net worth check". Under this method the IRS estimates a taxpayer's net income in much the same way as Hicks envisioned. The taxpayer is assumed to have net income in an amount equal to his or her consumption expenditures as well as any increase in net assets(2). The taxpayer has the burden of proof in showing that the amount came from sources other than these two.

Definitional Problems: The Capital Maintenance Approach

Accounting theoreticians have developed an income concept based upon the economic definition of income. The accounting profession designates this concept the *capital maintenance approach* to measuring income(3). Under this inter-

pretation, the net income of an entity for any period is the maximum amount that can be distributed to its owners during the period, and still allow the entity to have the same net worth at the end of the period as at the beginning, after adjusting for the owner's contributions. In other words, capital must be maintained before an entity can earn income. It should be pointed out that in financial accounting theory, capital maintenance means financial capital maintenance as opposed to capital maintenance. The difference between the two lies in the definition of capital. Under a financial capital approach, capital is defined as the firm's net assets, i.e., all assets minus liabilities. Under a physical capital approach, it is the productive capacity of the firm that is being measured. In other words, income accrues in the physical approach only if the value of the firm's existing inventories, plus its property, plant, and equipment increase during the period, after reduction for additional purchases by means of external financing.

To illustrate the capital maintenance approach, assume that a firm held net assets of \$40,000 at the beginning and \$90,000 at the end of the period. In addition, \$24,000 in additional investments were made by owners during the period, and there was \$4,000 in distributions to owners during the same period. The income in this instance would be \$30,000, as shown below:

Ending Net Assets:	\$90,000
- Beginning Net Assets	<u>(40,000)</u>
	50,000
Add: Dividends	<u>4,000</u>
	54,000
- Additional Investments by Owners	<u>(24,000)</u>
Net Income for the Period	\$30,000

Using the capital maintenance approach to define net income, the accounting profession finds themselves in decided agreement with economists about the total income the entity will realize over its lifetime. This lifetime income can be calculated by comparing the liquidation value of the entity's net assets with the firm's equity at the beginning of its life, making necessary adjustments of course for contributions of equity and withdrawals of the same. It is at these two points of time, birth and death if you will, that certainty

exists about the value of net assets.

Of course, income measurement must be done on a more periodic basis, e.g., annually or quarterly. Therefore some information about value must be obtained at these more frequent periods of time. Less certainty undoubtedly exists about value at these points in time than at formation and liquidation of the entity. For this reason value will have to be estimated as accurately as possible during these interim periods, using such concepts as (a) the present value of future cash flows from an asset, (b) current liquidation values, (c) current replacement cost, or perhaps (d) historical cost, i.e., the price at which the entity purchased the asset, with adjustments for depreciation and capital improvement(4). Once an appropriate value criterion has been selected, an entity's income can be estimated under this capital maintenance approach. Some type of current valuation, of course, is preferable.

Standard texts in accounting theory consistently criticize the capital maintenance approach, but not because this approach is restricted to using current values of assets, with all the related problems of trying to measure both unrealized gains and losses(5). Indeed this problem can be eliminated thorough the use of historical cost as a measure, albeit an inadequate measure of value. Nikolai and Bazley, in their standard text on intermediate accounting, even use the historical cost concept in depicting numerical examples of the capital maintenance method(6). For example, the preceding scenario can be assumed to be one using historical costs rather than current costs, thereby ignoring unrealized changes in value, i.e., increases in economic worth not recognized through an actual sale of the asset.

Criticism of the capital maintenance approach has principally centered around the concept that the method does not provide the necessary detailed information about specific components of income. However, this criticism seems faulty, as it assumes that the capital maintenance method must necessarily present income statements in the abbreviated form shown in the example above. This does not necessarily follow from adopting the capital maintenance method. There is no mandate that an income statement be so brief. In the example above, for instance, an expanded income statement based on the capital maintenance approach could provide extended detail about the \$30,000 change

in net income for the period.

A valid criticism of this method, however, is not in the format, but perhaps what it purports to measure. Since the accounting profession has adopted the historical cost method of valuation, there has been little attempt to measure unrealized gains, such as appreciation in land values, or even security values. It is the uncertainty of information about measuring unrealized gains and losses that has to date led the accounting profession to adopt the transactional approach as the methodology of income recognition. However, as will be discussed later in the paper, recent disenchantment with this method has motivated the accounting profession to reconsider the methodology and thus to rethink the concept of "income." By engaging in this theoretical study, the accounting profession appears to be making a conscious attempt to bring its income measurement more closely to a capital maintenance approach, and therefore more in line with the economist's definition of income.

The Transactional Approach

The development of the transactional approach to income measurement was not the result of some edict or standard issued by an authoritative source. Rather, it evolved through the trial and error process, probably becoming predominant over the capital maintenance approach because it is simply an easier method to apply. For whatever reason the transactional approach gained its ascendancy, it nevertheless is the accepted methodology for income measurement.

Under the transactional approach, net assets are carried at their historical cost, and revenue is not recognized, generally, unless a transaction, event, or circumstance, has occurred which provides verifiable evidence of the amount of the increase in the value of the firm. In other words, the firm, objective evidence provided by an actual sale or exchange with an outside party must exist before revenue can be recognized, i.e., the increase or decrease in the value of an asset is included in the firm's net worth. It is identical to a capital maintenance approach based on historical value, which of course means that no holding gains on changes in asset value is recognized in income for the period.

There are some exceptions to this exchange requirement for recognizing income under the

transactional approach. For example, the firm is allowed to recognize unrealized holding losses on temporary declines in inventory value and the value of marketable equity securities that are held as short-term investments. Moreover, permanent impairments in value, e.g., obsolete inventory, require immediate loss recognition. Other than these isolated examples, however, holding losses are not recognized in income. Holding gains are recognized only by firms in selected industries. In particular, brokers and dealers in securities, as well as most insurance companies, are allowed to recognize increases in security values in periodic income, even though an actual sale has not taken place. This general absence of recognition of holding gains and losses can distort the true periodic income of a firm, as defined by the economist. This lack of conformity has been acknowledged by the accounting profession, and at present there exists some attempts to ameliorate the situation. The profession is a long way from adopting a standard that requires recognition of holding gains and losses in income measurement, but there does appear to be a step in that direction.

The Financial Accounting Standards Board and the Conceptual Framework of Accounting

Several years ago the Financial Accounting Standards Board, (FASB), the organization responsible for the promulgation of financial accounting principles in the United States, began a long-term project to develop a consistent set of standards and rules for accounting by drafting a coherent system of important interrelated objectives and fundamentals that would provide a foundation for all future standards. Nothing has occupied the members of the Board more thoroughly than the struggle to define the proper concept of income(7). Indeed, this search for the proper definition of income is arguably the major thrust of FASB Concepts Statement No. 5, *Recognition and Measurement in Financial Statements for Business Enterprises*, and Concepts Statement No. 6, *Elements of Financial Statements*.

The Bifurcation of Income: Earnings versus Comprehensive Income

FASB has stated in its conceptual framework that a complete set of financial statements for an entity should include, *inter alia*, "earnings" for the period, and "comprehensive income" for the

period. The distinction between the two is that earnings is a subset of comprehensive income. The latter includes the total nonowner changes in equity during the period, while earnings is synonymous with the more traditional concept of "net income." Earnings is a measure of performance for a period and should exclude items extraneous to that period.

FASB is quite clear on the point that the concept of earnings does not include holding gains and losses. Earnings should measure, according to FASB, the extent to which asset inflows associated with cash-to-cash cycles exceed asset outflows. A cash-to-cash cycle, of which there may be several in an accounting period, comprises the time from cash payment for resource input, e.g., inventories, to the ultimate collection from the buyer, i.e., cash sales or collection of receivables. Holding gains and losses by definition do not generate cash receipts and thus are excluded from the concept of periodic earnings. Of course, gains and losses from actual sales of those assets would be included in periodic earnings. Briefly, then, one may conclude that the concept of "earnings" is simply the traditional "net income" of the past, dressed for a different party.

What is Comprehensive Income?

If there is going to be any convergence between accounting income in practice and economic income in theory, it must come from the accounting profession's definition of "comprehensive income." As stated previously, FASB feels that comprehensive income should be an integral part of the financial statements for a period, a radical departure from present practice. This inclusion does not mean, of course, that there must be a separate Statement of Comprehensive Income. As envisioned by FASB, a new combined Statement of Earnings and Comprehensive Income will be presented. The following format exemplifies the thoughts of FASB.

Revenues	\$200
Expenses	(80)
Operating Income	120
Gains From Sales of Investments and Operational Assets	30
Losses From Sales of Investments and Operational Assets	(20)
Earnings	130
Nonowner Changes in Equity	20
Comprehensive Income	\$150

Since earnings is synonymous with the present concept of net income, any radical change in the accounting definition of income must be inherent in the phrase "nonowners changes in equity." According to FASB, comprehensive income is the change in equity of a business enterprise during a period as a result of transactions (earnings, in other words) and other events and circumstances from nonowner sources(9). It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners. This very general concept of changes in equity from nonowner sources is restated later by FASB to be the result of price changes, casualties, and other effects of interactions between the enterprise and the economic, legal, social, political and physical environment of which it is a part(10).

These effects may be measured, according to FASB, in either constant dollars or nominal, current dollars. In other words, transactions, a synonym for earnings and other nonowner changes in equity, can be adjusted for inflationary or deflationary trends. FASB falls short, however, in allowing the recognition of holding gains and losses. Rather, it stipulates that the income selected for measurement, which under current practice, is transactionally-based only, may be adjusted for changes in prices during the period. For example, sales made during the early part of the period would be deflated by some price index if constant-dollar reporting is required under some inflationary period. The reader should not, however, confuse constant-dollar accounting with recognition of holding gains and losses. The latter does not follow the former. Indeed, all that FASB is stating is that if holding gains and losses are to be recognized pursuant to some future accounting standard, the option exists to recognize them in constant-dollar terms, or current dollar terms.

The crucial question becomes, then, is FASB on the verge of taking the step toward allowing recognition of holding gains and losses in com-

prehensive income, whether adjusted for inflation or not? The reader should keep in mind that the conceptual framework enunciated by FASB does not in itself set accounting standards, but rather provides a theoretical background from which the later standards will develop. If recognition of these holding gains and losses is implemented in future standards, their genesis will be found in the conceptual framework. Unfortunately, a careful reading of Concepts Statements No. 5 and 6 gives no clear indication in what direction FASB will go.

Is Recognition the Key?

The FASB definition of comprehensive income, viz., changes in owner's equity resulting from transactions and other nonowner events, is vague, perhaps deliberately so. One must look beyond the definition of comprehensive income, to the definitional concept of "recognition" preferred by FASB.

A transaction, event, or circumstance is incorporated into financial statements when it is "recognized" by the entity. In *Concepts Statement No. 5* FASB asserts that recognition applies to both revenues and assets, and to subsequent changes in the item.

The operational phrase here is "changes in the item." Once an asset, e.g., investment land, has been recognized as an asset due to a purchase, do subsequent "changes in the item" to be recognized include holding gains and losses? To pose the question differently, would the following entry in the firm's accounting journal, be consistent with generally accepted accounting principles? The example assumes an acquisition price of \$1000 one year ago, and a current market value of \$2200. The appropriate journal entry would be:

Dr. Land	1200
Cr. Holding Gain From Appreciation, Land	1200

Thus, the asset account Land has been increased to a new book value of \$2200, and a gain of \$1200 is recognized in the income statement for the period.

Recognition Criteria

The fundamental recognition criteria, as expressed in Concepts Statement Number 5, is that the item (revenue, gain, loss asset) must be recog-

nized if it should(11): (a) meet the definition of an element (revenue, gain, asset, loss) of a financial statement; (b) have a relevant attribute measurable with sufficient reliance; (c) have relevance, i.e., information about it is capable of making a difference to users of the financial statements; and (d) have reliability, i.e., provide information that is representationally faithful, verifiable, and neutral.

Would recognition of holding gains and losses meet all these criteria? A holding gain would certainly meet the definition of element of a financial statement, viz., a gain or loss which is a change in owner's equity brought about by transaction or "other nonowner events." Certainly a change in the value of land, securities, inventory, etc., whether positive or negative, is a nonowner event which alters owner's equity. Moreover, the resulting asset, e.g., the incremental changes above or below historical cost recorded by entries similar to the one above, should meet the theoretical definition of an asset. Under Concepts Statement No. 6, assets are defined as probable future economic benefits obtained as a result of past transactions or events. The change in land value of \$1200 in the foregoing example has already occurred, is a past event, and certainly provides a future economic benefit to the firm.

Does the holding gain or loss possess the second and third criteria? To wit, is it measurable with sufficient reliability, by an attribute (characteristic) capable of making a difference to financial statement readers? To paraphrase, once measured, is it relevant? FASB enumerates five attributes of assets which are acceptable attributes of measurement(12). One of these is current market value. Is this value relevant to the statement user? Of course it is. In the above example, what is a most relevant amount to the user trying to assess the true economic worth of the firm. Certainly the \$2200 current market value of the land depicts the true economic net worth of the firm. This amount reflects sound investment decisions by management, and to carry the land on the books at the historical cost of \$1000 only distorts the real situation. The current practice of recognizing this increase in value only upon eventual sale of the land is perhaps only a timing problem, but the lapse of time between the acquisition and the sale may be so delayed as to bring about a serious mis-allocation of resources in the financial markets, if one is to extrapolate this situation to all the firms within the economy.

Lastly, can recognizing the holding gain or loss be done with reasonable accuracy, i.e., be verifiable? Is the amount recognized sufficiently free of error and bias? There does not presently exist any requirement that information about an asset be completely reliable, i.e., absolutely perfect. Waiting for such reliability may make the information provided by the ultimate recognition so untimely that it loses all relevance. The critical question then becomes, is the cost of obtaining meaningful data about current market prices worth the benefits obtained by providing a picture of the true economic worth of the firm?

In many cases, the answer is obviously yes. This is because the cost of collecting the data is insignificant. Obtaining current prices about marketable securities is virtually cost-free, as that information is widely published. In other cases, such as inventories, the current price should be readily available, from recent purchases, if one uses replacement value as the measurement attribute, or from recent sales, if one uses current retail price as the measurement attribute.

Other assets, e.g., investment land that is not readily traded and for which no established market price exists, as well as the firm's operating plant and equipment, present much more significant information costs. The recognition of holding gains and losses in these instances would only occur when the benefits of the additional information exceed the costs of its procurement.

Such additional informational costs for these classes of assets should not prevent recognition of holding gains and losses at some point during the holding period of the assets, even if it is not done on a yearly basis. For example, if a tract investment land increases in value by twenty percent each year it is held the costs of obtaining this information may exceed the annual benefit that users of the financial statement derive. However, given that yearly appraisal costs are fairly constant for a given parcel of land, the necessary information costs about an aggregate increase in value over a three-year period, for instance, may be less than the benefit of providing the identical information to statement users once every three years.

Assume that a firm must spend \$100 for each appraisal of its property that it must obtain. Further, it is judged that each yearly change in value of its investment land provides a subjective value

of \$40 to financial statement users, as the latter place this value on more exact information about the firm's true worth. Obviously, such facts as these call for a reappraisal of the land every three years with a corollary adjustment to the book value of the land, and recognition of the appropriate holding gain or loss. Recognition over a two or three year period represents a compromise over the current policy of no recognition of holding gains and losses, and yearly recognition, where costs of the information exceed its benefits. To the point, the difficulties involved with obtaining adequate information about certain asset values should not completely obviate any consideration of recognizing their current values until an actual exchange takes place. The present practice can only be justified by the attitude that historical cost has always been the method of valuation, and to introduce a more radical method would only be confusion. This is a doubtful premise, and in no way justifies the distortion currently taking place.

The Future of Accounting Income

As stated previously, the conceptual framework of accounting currently being developed does not impose actual standards of accounting for firms. Rather, the conceptual framework merely provides broad guidelines, a theoretical foundation, for further development of standards. The theoretical framework, as currently promulgated, does not preclude a future standard in which some, if not all, holding gains and losses are recognized in accounting income, bringing it to a convergence with the economic definition of income. It is suggested here that FASB not become captive to such conservative principles as recognition only when an exchange takes place. This principle of conservatism seeks an absolute certainty about any information on the change in an entity's net worth. That rather extreme standard actually serves to distort economic reality, and needs to be reformed.

A preferred income statement, one more closely aligned with the economist's definition of income, is shown below. Variants of the following may of course exist, but the approach depicted here would be an improvement on matters as they now stand, as well as be in keeping with the conceptual framework being developed by FASB.

In this example of the capital maintenance approach to income statement presentation, using a current value method of valuation, assume that

a firm is created with an initial investment of \$50,000. This amount is used to buy inventory at a price of \$20,000, and equipment at a price of \$30,000. The equipment has a useful life of 15 years, and will be depreciated under the straight-line method, using no salvage value.

The inventory is sold during the year for \$27,000, at a time when its replacement cost was \$23,000. Additional inventory was subsequently purchased for \$24,000 and its replacement cost at the end of the year was estimated to be \$25,000. At the end of the year the equipment had a replacement cost of \$33,000. The income statement for this company, with a division between earnings and comprehensive income, is shown below.

Sales	\$27,000
Cost of Goods Sold	(23,000)
Gross Profit	4,000
Depreciation Expense	(2,200)
Earnings	\$1,800
Holding Gain on Inventory Sold	\$3,000
Holding Gain on Inventory Held	1,000
Holding Gain on Equipment Held	3,000
Holding Gains	7,000
Comprehensive Income	<u>\$8,800</u>

1. Cost of Goods Sold is based on replacement cost at the time of sale.
2. Depreciation expense is based on the replacement cost of the equipment.

In conclusion, there seems to be a trend toward convergence of the accounting and economic definitions of income. This meeting of the minds can only be seen as fortunate, for the proper measurement of economic activity demands that measurement by the accounting profession conform, as much as feasible, to the true nature of wealth enhancement.

Footnotes

- 1 J.R. Hicks, *Value and Capital*, (Oxford: Clarendon Press, 1946), p. 172.
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- 3 S.S. Alexander, "Income Measurement in a Dynamic Economy," *Five Monographs on Business Income*, (New York: Study Group on Business Income, American Institute of Certified Public Accountants, 1950, p. 15).
- 4 E.O. Edwards and P.W. Bell, *The Theory and Measurement of Business Income*, (Berkely: University of California Press, 1970).
- 5 Donald Kieso and Jerry Weygandt, *Intermediate Accounting*, (New York: John Wiley and Sons, 5th ed., 1986), p. 115.
- 6 Loren A. Nikolai and John D. Bazley, *Intermediate Accounting*, (Boston: Kent Publishing Co., 4th ed. 1988), p. 152.
- 7 Financial Accounting Standards Board, *Statement of Financial Accounting Concepts No. 5: Recognition and Measurement in Financial Statements of Business Enterprises*, (Stamford: Financial Accounting Standards Board, 1984).
- 8 Ibid., paragraph 36.
- 9 Financial Accounting Standards Board, *Statement of Financial Accounting Standards No. 6: Elements of Financial Statements*, (Stamford: Financial Accounting Standards Board, 1985), Paragraph 70.
- 10 Ibid., paragraph 74.
- 11 *Concepts Statement No. 5*, paragraph 63.
- 12 Ibid., paragraph 67.

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