

REVIEW OF *THE TOTAL INCOMES SYSTEM OF ACCOUNTS*
BY ROBERT EISNER

This book is the latest version of Eisner's modifications of United States national income accounts. It is aimed at improving inter-temporal and, potentially, international comparability of measures of aggregate output and economic well-being. The extensions and adjustments focus primarily on (1) non-market household production, (2) final and intermediate product and (3) capital formation. A Total System of Income Accounts (TISA) is constructed for the period 1946-81 in both current prices and 1972 dollars to measure the changes in aggregate output and economic well-being.

Eisner recognizes that the ground he covers has been well-trodden by many other investigators. For comparative purposes, he includes estimates of similar extensions made for the United States economy by Jorgenson-Fraumeni, Kendrick, Nordhaus-Tobin, Ruggles-Ruggles, and Zolotas. Eisner has published much of this work previously (Eisner 1988, 1985, 1978), but the present volume provides useful additional information on his sources and methods. It is particularly appropriate that these basic issues of national accounting should again be raised now when the United Nations System of National Accounts is being revised.

NON-MARKET HOUSEHOLD PRODUCT

In estimating the total value of non-market household production, Eisner follows the Kendrick approach of calculating it as the product of the hourly wages of domestic workers and the number of hours devoted to unpaid household work. The results of this computation show a decline in importance of unpaid household labor from about 45 percent of conventional market GNP in 1945 to about 33 percent in 1981. Other investigators including Jorgenson-Fraumeni, Nordhaus-Tobin and Zolotas valued non-market activity at its opportunity cost market wage rate. Such an approach results in assigning a much higher valuation for non-market household production.

With respect to including leisure in the measurement of non-market household product, however, Eisner draws the line. He argues "estimates of changes in its (leisure's) value over time prove acutely sensitive to the choice of deflators for wages, which carries with it assumptions about the growth in "productivity" of leisure." (Eisner, 1989, p. 19.) On this basis he recommends that estimates of the value of leisure might therefore better be kept separate from other extensions of income and product accounts, offered as addenda below the bottom line, if included at all. This position on leisure is in marked contrast with that of other investigators such as Jorgenson-Fraumeni, Nordhaus-Tobin, and Zolotas all of whom include the value of leisure in their measures of well-being.

Eisner also recognizes that the assumption that work provides no utility is probably wrong. Surveys by the Institute of Social Research at the University of Michigan have reported that a large proportion of the population indicate they enjoy their work. As the economy has evolved, there may have been significant changes in the degree to which individuals do or do not find their work attractive, and these changes may affect well-being even more than the changes in leisure.

FINAL AND INTERMEDIATE PRODUCT

The distinction between final and intermediate product is central to the measurement of aggregate output. Eisner takes the position that in the United States national accounts (1) certain government and household expenditures currently classified as final expenditures should be treated as intermediate product, and (2) some business expenditures currently considered to be intermediate costs should be viewed as final product. Unlike some other investigators, however, Eisner does not deduct regrettable expenditures, disamenities, depletion or deterioration of the environment from final output.

The question of which government expenditures are final or intermediate is as old as national income measurement itself. Kuznets originally took the view that any estimate of intermediate government services would be arbitrary and that under these circumstances it was best to adopt the most easily obtainable solution and to measure government intermediate services by the taxes and other payments made by enterprises to governments. (Kuznets, 1941, p. 45). With World War II, however, it became apparent this approach was unacceptable for measuring the performance of the market economy in view of the obvious importance of defense expenditures and the growing role of the government in the economy.

TISA's approach to this problem classifies government expenditures into ten broad categories consisting of defense (including police and fire), space, education and training, health, housing and community services, transportation, and mobility, parks and recreation, natural resources, welfare and general administration. These categories are then allocated to different sectors of the economy as consumption, investment, and intermediate product. As suggested by Kuznets, the intermediate product transferred to business is viewed as a purchase paid for by indirect taxes and is thus excluded from GNP. The intermediate product transferred to households is treated as both a transfer to household consumption and as a deduction on the same side of the account so that gross household product is unaffected.

Although the allocations of government expenditures made by TISA are of necessity ad hoc in nature, one of the most questionable is the treatment of expenditures on police and defense as intermediate costs. Eisner argues that these expenditures are "necessary to protect the activity and profits of production." (Eisner 1989 p. 9.) It seems somewhat simplistic to view the police and defense as solely intermediate inputs required by economic activity. Indeed, in addition to traffic control and personal safety cited by Eisner (p. 9) police statistics indicate that one of the major functions of the police is settling family disputes—these may be regrettable but they surely do not represent intermediate costs of production.

In commenting on Nordhaus-Tobin's treatment of defense expenditures as intermediate product, Abramovitz raised the question as to why such expenditures have increased. "Has the need the country seems to feel for diverting resources to that purpose arisen as a result of the economic activity in which we're engaged or has it arisen for other reasons?" (Abramovitz, 1972, p. 86). If one concludes, as Abramovitz suggests, that defense expenditures arise for other reasons, then they are a use of final output rather than an intermediate input and there is little excuse for excluding them from a measure of output relevant to economic well-being.

The expenses related to commuting to work pose a different set of problems. Eisner treats commuting expenses as job related intermediate costs rather than as final consumption. Presumably, however, individuals have a choice of living near their work or commuting. It would be equally appropriate, therefore, to treat commuting expenses as representing a part of the price that a wage earner pays for more economical or more desirable housing, and thus as final consumption expenditures.

Indeed, if commuting expenses are considered to be intermediate costs, then any additional housing costs or disamenities incurred by those individuals choosing to live near their work places should also be treated as intermediate costs. This situation is made even more complex because housing location is closely related to one's choice of lifestyle; some individuals prefer to live in the center of cities while others prefer suburbs or even the more remote country-side. Some families move to the suburbs to have more space for their children or for more convenient schools. Other families may return to live in the city when their children leave home. It does not seem appropriate that some of the differences in the cost of various lifestyles related to commuting should be charged off as intermediate business costs.

Finally, some expenditures by business currently treated as intermediate costs in the United States national accounts are reclassified in TISA as final product. Most noteworthy in this respect are a portion of the advertising expenditures that support television, radio and printed media. In addition, Eisner makes estimates of expense account items that represent final consumption by employees—in particular the use of company-owned cars. No estimates were made for amenities of the workplace that represent improvements in the working environment.

CAPITAL FORMATION

Capital formation in the official United States accounts is defined as being equal to gross private domestic investment. This concept excludes both household and government capital formation, and is confined to the expenditures by enterprises on structures (non-residential and residential) producers' durable equipment and changes in the stocks of inventories. The United States accounts include owner-occupied housing as part of gross private domestic investment by inputing its ownership to a fictional enterprise.

TISA not only includes all the structures and durables purchased by both government and households, but it also extends the concept of capital formation.

It embraces investment in intangible capital such as research and development and human capital such as education and health. Both Eisner and Kendrick (1976) follow the approach of including in capital formation the opportunity cost of students time in school as well as the actual costs of education. This is in contrast with the Jorgenson-Fraumeni (1987) estimates based on the present value of projected incomes differentials associated with formal education. Unlike Kendrick, however, Eisner does not include the costs of child-rearing as investment in human capital.

In terms of magnitudes, the various extensions of gross capital formation show considerable variation. The Nordhaus-Tobin estimate of gross capital formation was about 250 percent larger than the U.S. Department of Commerce official estimate of gross private domestic investment; Eisner's and Kendrick's estimates both exceeded the official estimate by about 400 percent and the Jorgenson-Fraumeni (1987) estimate exceeded the official estimate by over 1,700 percent.

CAPITAL CONSUMPTION, CONSTANT DOLLAR MEASURES AND NET REVALUATIONS

To obtain "real" measures of the change in aggregate output and economic well-being, Eisner undertakes three adjustments to his extended accounts. First, deductions are made for the consumption of existing capital. Second, the accounts in current prices are deflated to obtain constant dollar measures. Finally, Eisner, goes one step further and computes "real capital gains" that represent the net increase in the value of existing assets relative to the general level of prices.

First, with respect to capital consumption, Eisner, like most economists bases his estimates for various assets on the length of their economic life. In those instances where the capital asset actually wears out or becomes obsolete because of changes in consumer tastes, this procedure may be satisfactory for allocating the original cost of the capital over its useful life-time. However, in those cases where capital assets become obsolete due to the introduction of superior or more productive capital at lower cost, this shortened economic life is a reflection of technological advance rather than faster capital consumption. Thus, the capital consumption estimates based on the economic life of capital in an economy with rapid technological change will result in an understatement of the real increase in capital stock.

Second, for the construction of constant dollar estimates, Eisner relies on official price indexes which by their very nature rely on measuring the price changes of products that do not change from period to period. In theory, hedonic price indexes may be constructed for some products that change, but even the hedonic indexes can relate to only those new product features which previously cost more and could be separately priced. Products that remain the same tend to have lower productivity increases and thus are more subject to passing along in higher prices the increase in their labor and material costs. New products that successfully take over the markets of old products are by definition lower price in real terms. The official price indexes cannot capture the Darwinian process of

product innovation, and consequently they understate the actual rate of growth in real output.

Third, Eisner's rationale for including net revaluations is based in large part on his acceptance of the Haig-Hicks-Simon concept of income as that which can be consumed while keeping real wealth intact. Since, by definition, wealth depends on the discounted stream of anticipated future income, any changes in anticipations will be reflected as changes in wealth. Thus, Eisner points out that the changing relative prices of oil have had enormous effects on current and expected future incomes of various developed and less developed countries, and on their domestic price levels and relative price structures.

There can be no doubt that net revaluations play an important part in economic well-being, but it may be questioned whether TISA has done more than merely point out the existence of this problem. Human capital rather than tangible and financial capital provides the major stream of income. The relation of future wages and salaries to future prices is central to economic well-being. TISA does not attempt to incorporate changes in the discounted stream of future real income and expenditures into its measure of well-being. The Haig-Hicks-Simon concept of income is not, in fact, operational, and a partial attempt to implement it may result in subjective and speculative estimates that are difficult to defend.

TISA AS A MEASURE OF ECONOMIC WELL-BEING AND AS A SYSTEM OF ACCOUNTS

Economists and others who currently use the official series of real GNP as approximate measures of the change in economic well-being should take heed of this book. In developing TISA, Eisner has effectively demonstrated the inadequacies of the official United States national account aggregates for the measurement of economic well-being. He has also suggested a number of extensions into the areas of non-market household activity, better demarcation of intermediate and final expenditures, expansion of the concept of capital formation and the importance of capital gains and revaluations.

At the same time this book makes it apparent there is no unique measure of well-being that is widely accepted. As already noted, Eisner excludes leisure from his measurement of well-being on the grounds that extended measures of income and product that include leisure are dominated by this component. There are, however, other obvious aspects of economic well-being that are also omitted. TISA is completely silent about the distribution of income, job choice, working conditions, and new products that have completely altered the life-style of the population. Although price may reflect marginal utilities, it does not follow that changes in total expenditures can be used to reflect changes in total utility. One has the feeling that trying to measure utility is indeed like looking for the proverbial black cat in a coal bin at night—with the haunting feeling that the cat may be purely hypothetical after all.

The TISA sector accounts are drawn up primarily for deriving the income and product originating in each sector. They are not designed to show sector

receipts and outlays, financial transactions and balance sheets. In developing his expanded accounts, Eisner argues:

“that the conventional accounts should be retained, to be viewed alone or as a central component of revised or expanded measures. They offer and should continue to offer historical series of enormous value for economic analysis. The market transactions that from their core are of course essential to any meaningful measure of a largely market economy.” (Eisner, 1989 p. 8.)

On the other hand, in his testimony before Congressional committees, editorials in the New York Times and commentaries on television, Eisner has also spoken out boldly about the misleading information provided by the United States national accounts and budget presentations. In particular, he correctly points out that the official data presented on the government deficit and on saving and investment in the economy are seriously misleading and result in erroneous economic policies.

TISA also addresses these concerns, and makes practical suggestions for the development of more comprehensive and economically meaningful national accounts. Specifically, the recognition of both government and household capital formation and the broadening of the concept to include intangible investment as well as durable goods are important steps forward.

RICHARD RUGGLES
Yale University

REFERENCES

- Abramovitz, M., Comments on “Is Growth Obsolete,” *Economic Growth*, Colloquium V, NBER, New York, 1972.
- Eisner, R., Total Incomes in the United States 1959 and 1969, *Review of Income and Wealth*, 24 (1), 41-70, 1978.
- Eisner, R., The Total Incomes System of Accounts, *Survey of Current Business* 65 (1), 24-48, 1985.
- Eisner, R., Extended Accounts for National Income and Product, *Journal of Economic Literature*, 26 (2), 1611-84, 1988.
- Eisner, R., *The Total Incomes System of Accounts*, The University of Chicago Press, Chicago, 1989.
- Jorgenson, D. W. and Fraumeni, B. M., *The Accumulation of Human and Non-Human Capital, 1948-1984*, Unpublished manuscript, Harvard University, 1987.
- Kendrick, J. W., *The Formation and Stocks of Total Capital*, Columbia University Press for NBER, New York, 1976.
- Kendrick, John W., Expanding Imputed Values in the National Income and Product Accounts, *Review of Income and Wealth*, 25 (4), 349-363, 1979.
- Kendrick, J. W., The Concept and Estimation of Full Personal Income in Current and Constant Prices, Paper presented at IARIW Conference, Rocca di Pappa, Italy, 1987.
- Kuznets, S., *National Income and Its Composition, 1919-1938*, NBER, New York, 1941.
- Nordhaus, W. D. and Tobin, J., Is Growth Obsolete? *Economic Growth*, Colloquium V, NBER, New York, 1972.
- Ruggles, R. and Ruggles, N. D., Integrated Economic Accounts for the United States, 1947-1980, *Survey of Current Business*, 62 (5), 1-53, 1982.
- Zolotas, X., *Economic Growth and Declining Social Welfare*, Bank of Greece, Athens, 1981.