

## 50-YEAR RETROSPECTIVE OF THE IARIW: THE EARLY YEARS

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This paper, for the anniversary session on Milestones in Measurement, covers the years of the International Association for Research in Income and Wealth (IARIW) through the sixth General Conference in 1959. The first section of the paper describes the setting in which the Association was established and attempts to give a sense of the early years by identifying the people who were active in the Association and the topics that were being discussed. The second section identifies four milestones among the papers published in *Income and Wealth*, the volumes that brought together a selection of the papers from the General Conferences of this early period.

### I. THE IARIW: THE ORGANIZATION

#### A. *The Setting in 1947*

The IARIW first began to take a public shape in a meeting held on September 15, 1947 in Washington, DC, at the time of the biennial meeting of the International Statistical Institute. Three points help set the scene for the organization meeting.

First, the development of national income and related estimates in the preceding six or seven years had been rapid and their application in policy had been widespread. It would be beyond the scope of this paper to detail the uses of national income estimates, for example, in analysing business cycles, the needs of mobilization for World War II, and tasks of post-war reconstruction.<sup>1</sup> However, Richard Ruggles's opening sentence in a booklet published in 1949 summed it up: "National income accounting in recent years has passed the stage where it is of interest only to academicians, and has become an indispensable aid in the formulation of economic policy" (Ruggles, 1949, p. 7). In some cases, the key players in these developments were in relatively close touch. For example, consultations between national income experts in the U.S., Great Britain, and Canada were formalized in 1944 with a view to bringing the conceptual and statistical treatments of the three countries more closely in line. In other cases, work had

*Note:* The author wishes to thank Hans Adler for his comments as a discussant at the 25th General Conference, C. A. Oomens for the comments provided subsequently, and Kenneth Kirkley for research assistance.

<sup>1</sup>These policy uses have been described elsewhere. For contemporary descriptions, see as examples the four papers in Series I of *Income and Wealth* about uses in the U.S., France, the United Kingdom, and Netherlands. For retrospective reviews, see material in Carson (1975) about the United States, Aukrust (1994) about three Scandinavian countries, and den Bakker (1994) about the Netherlands.

gone on independently. For example, in Scandinavia work on concepts and empirical applications had proceeded during World War II with little information on developments in English-speaking countries (Aukrust, 1994).

Second, an international dimension of work on national income and related estimates was increasingly well recognized, especially in light of the policy emphasis just noted. The League of Nations had convened a group to consider national income statistics in 1945, renewing an interest, held in abeyance during World War II, by its Committee of Statistical Experts. The preface to the resulting report expressed the hope of the Subcommittee on National Income Statistics that the recommendations of the report “will be applied to the widest possible extent in each country in the computation of national income and related accounts in order to secure greater international comparability than in the past” (United Nations, 1947, p. 5). Shortly thereafter the United Nations followed up with the establishment of the Section for National Income Statistics and Research in the Statistical Office (United Nations, 1948).

Third, the usefulness of a professional association in the field had been well established. In the United States, the Conference on Research in Income and Wealth had celebrated its tenth anniversary in 1946. It could already point to fruitful exchange of information, progress toward agreement on concepts and methods, work toward agreement on plans for research, and stimulation of research, particularly in income distribution, as the results of those years (Carson, 1990). Many of its features, notably a format for the conference sessions intended to emphasize the scholarly exchange of views, were carried over to the IARIW.

Richard Stone, looking back in 1951, probably expressed the general expectation: “. . . in this subject which twelve years ago, in its practical aspects at any rate, was a veritable Tower of Babel, there has been developed a common language and on many of the most pressing problems a common point of view. It is to be hoped that in the coming decade this advance will be consolidated. With this object in view a new association, the International Association for Research in Income and Wealth, was founded . . .” (Stone, 1951a, p. 18).

Information about the 1947 organizational meeting is scanty. Aside from the preface of *Income and Wealth*, Series I, few documents seem to have survived except a brief report made by Milton Gilbert to the International Statistical Institute. Gilbert reported that the meeting brought together “a galaxy of stars in the field of income and wealth” (Gilbert, 1947, p. 186). A Council was provisionally selected, consisting of the following nine persons:

Professor Kuznets	Mr Derksen
Mr Stone	Mr Lundberg
Professor Rao	Professor Tinbergen
Mr Clark	Professor Perroux
Mr Gilbert	

Gilbert further reported that four specific tasks were assigned to the Council: draw up a list of scholars to be invited to become charter members; draw up and submit to the members a set of by-laws; make plans and arrangements for the first meeting; and arrange for a secretariat, which will, among its duties, maintain a bibliographical service.

An overview of the Association's early years can be organized under the last three tasks.

### B. *The By-laws*

The by-laws of the Association were discussed at the Association's first meeting in 1949 and subsequently approved by a mail canvass of the membership. They identified the following fields as of interest to the IARIW:

- definition and measurement of national income and wealth,
- social accounting and its use in economic budgeting,
- international comparisons and aggregations of national income and wealth,
- problems of statistical methodology, and
- related matters.

The Association was described as a working body whose membership was composed of scholars actively engaged in these fields of interest, each member participating in his individual capacity. Membership in the Association was by invitation. Invitations were extended following the 1947 organization meeting, and at the time of the 1949 General Conference, there were about 100 members. The by-laws established a membership procedure that involved proposal by two members, nomination by the Council, and a vote by the membership.

The Council was established as the governing body of the Association. It was to consist of six members elected by ballot and three members co-opted by the elected members, provided that the retiring Chairman of the Council continued to be a member for two years following retirement as Chairman. After the first Council, elected members were to serve a six-year term. The chairman was to serve a two-year term, and, after the first Council, to be elected by the membership from among the Council members. Table 1 shows the Council's membership, as selected under the by-laws, through the early period of the Association. The activities of the IARIW were to be undertaken to further research in its fields of interest. The activities identified in the by-laws included bringing scholars into closer contact with one another, arranging Conferences of scholars from time to time, circulating documents and bibliographies, and cooperating with other professional associations.

### C. *Conferences*

The conferences have been a major part of the Association's activities. The tradition of holding General Conferences every two years was set in this early period. The first General Conference was held at King's College, Cambridge, August 27–September 3, 1949. In all, 15 papers were discussed, and another eight were available at the meeting (Box 1). Erik Lundberg, the editor of the volume of *Income and Wealth* that subsequently published eight of the papers, noted that the papers presented and the contributions made to the discussion gave a general impression of the lines of thought and methods of approach prevailing in the different countries. Further, the intensive discussions, both within the formal meetings and to a large extent outside the formal meetings in small groups,

TABLE 1  
THE COUNCIL OF THE IARIW, 1949-51 TO 1959-61

1949-51	1951-53	1953-55	1955-57	1957-59	1959-61
Benedetto Barberi	×	*×	×	×	
Colin Clark	×	×	×		
M. A. Copeland	×				
J. B. D. Derksen					
Milton Gilbert	*×	×	×		×
Simon Kuznets		×	×		
Erik Lundberg	×				
François Perroux					
* J. R. N. Stone	×	×	×		
V. K. R. V. Rao				×	×
	R. C. Geary	×	×		
	J. Marczewski	×			
	Shigeto Tsuru				
		Kjeld Bjerke	*×	×	×
		Petter Jakob Bjerve	×		
			C. A. Oomens	×	×
				* Raymond Goldsmith	×
				E. Malinvaud	
				Christopher Saunders	*×
				J. Tinbergen	×
					Odd Aukrust
					G. Fürst

\* Designates the Chairman.

Source: Various issues of the *Bibliography on Income and Wealth*.

showed that there were many different views on the issues debated (*Income and Wealth*, Series I, pp. vi-vii).

The list of authors and the membership of the Council chosen at the 1949 General Conference also suggest that the early discussions were lively. For example, one quickly spots that Simon Kuznets and Richard Stone, both future winners of Nobel prizes in economics, presented papers and were on the Council. Because only 15 papers were discussed over the week-long meeting, there was time to pursue topics in some depth. Also, Richard Ruggles reports that far fewer than the 100 or so members actually attended the Cambridge Conference, so even if some non-members were present, the small size of the group also lent itself to discussion. C. A. Oomens reports that the atmosphere was a mixture of eagerness to learn from the experience of others and of vacationing—August, the month of the conference a traditional vacation time in the northern hemisphere. Although there were other fora, such as the conferences of national accounts experts at the OEEC and meetings of the Statistical Commission at the United Nations, the discussions at the General Conference, unlike those in the other fora, did not have to lead to decisions. Discussions were, accordingly, freer—one could risk more mistakes than in other meetings—and indeed included a good measure of joking.

A total of about 150 papers were presented at the six General Conferences during the early period. Of these, 71 papers by 70 different authors (repeat authors offsetting dual authorship) were published in Series I through IX of *Income and Wealth*. The list of authors confirm that the General Conferences brought together the current and rising leaders in the Association's fields of

interest.<sup>2</sup> In addition to Kuznets and Stone, the contributors to *Income and Wealth* included, to mention a representative few, key staff of the national income units in international organizations, including J. B. D. Derksen of the United Nations and Milton Gilbert of the Organisation for Economic Co-operation; senior staff of national statistical offices and agencies using statistics, such as Simon Goldberg of Canada, Geer Stuvell of the Netherlands, Kjeld Bjerke of Denmark, and Odd Aukrust of Norway; and well-recognized academicians and authors of conceptual and empirical works such as Jan Marczewski of France, V. K. R. V. Rao of India, and Raymond Goldsmith of the United States.<sup>3</sup>

In addition to the General Conferences, a round of regional conferences had been launched by the end of the early period of the IARIW. These were held in Rio de Janeiro, Brazil, in 1959; in Hong Kong, in 1960; in Addis Ababa, Ethiopia, in 1961; and in Istanbul, Turkey, in 1962. In general, these regional conferences dealt with the problems of practical estimation of national income and related estimates and with uses of the estimates, particularly in analysis of economic growth. A theme that ran through the discussions was the need for further thought to be given to the application of systems of accounts to economies where the household sector's production, consumption, and capital formation were large portions of the totals. In some regions, the Conferences brought together those working in the field in the region for the first time, and the prefaces to the resulting volumes recorded the substantial value of the resulting exchanges of views and experiences.

#### D. *Bibliography on Income and Wealth*

The Association, soon after its organization meeting, launched an ambitious effort to identify, catalogue, and classify books, papers, and other writing in the fields of its interest. In late 1947, the newly formed provisional Council decided that the compilation of an international bibliography was a useful undertaking for its international membership. In recognition of the rapid progress in the preceding decade, the Council decided to organize a bibliography covering 1937–47. The *Bibliography on Income and Wealth*, Volume I, was a voluntary cooperative effort of 35 correspondents in as many countries and of the National Income Unit of the Statistical Office of the United Nations for countries in which there was not a correspondent. Daniel Creamer, as general editor, organized and edited 1,500 individual annotated citations.

Concurrent with the decision to prepare the eleven-year bibliography, the provisional Council arranged to keep it up to date by organizing the compilation of a quarterly bibliography. These were circulated in mimeographed form, eventually through March 1957, and then published in seven volumes each covering

<sup>2</sup>The volumes of *Income and Wealth* covering the early years contained lists of papers presented, but did not contain lists of participants at the General Conferences. Lists of participants might have allowed one to identify those for whom the early Conferences were training grounds, as would have been suggested by their later appearances as presenters or Council members.

<sup>3</sup>These categories are not mutually exclusive. For example, Milton Gilbert, a leader in U.S. national accounting, moved to the OEEC as Director of Statistics and National Accounts, and Simon Goldberg, of Statistics Canada, subsequently moved to the United Nations as Director of the Statistical Office.

## BOX 1

PAPERS DISCUSSED AT THE FIRST GENERAL CONFERENCE  
CAMBRIDGE, 27TH AUGUST—3RD SEPTEMBER, 1949

Odd Aukrust	On the Theory of Social Accounting
Odd Aukrust	Recent Experiences in the Use of Social Accounting in Norway
Gerhard Cohn	Experiences in the Use of Social Accounting in Public Policy in the United States
J. B. D. Derksen	Intertemporal Comparisons of Real National Income, An International Survey
E. F. Jackson	The Recent Use of Social Accounting in the United Kingdom
Simon Kuznets	Government Product and National Income
Erik Lundberg	Recent Experiences in the Use of Social Accounting in Sweden
Jan Marczewski	Les Expériences Récentes de l'Emploi de la Compatibilité Social par la Politique Économique en France
François Perroux	Les Macrodécisions
V. K. R. V. Rao	Inter-country Comparisons of Real National Income
W. B. Reddaway	Some Problems in the Measurement of Changes in the Real Geographical Product
Milos Stadnik	Socialization and Measurement of Industry's Product
Richard Stone	Functions and Criteria of a System of Social Accounting
G. Stuvcl	Development of Stock of Capital Goods in Six Countries Since 1870
G. Stuvcl	Recent Experiences in the Use of Social Accounting in the Netherlands

*Note:* Eight other papers were available to the Conference: Benedetto Barberi, National Income and Balance of Payments; Frau Dr. H. Bartels and Dr. G. Fürst, Social Accounts and Calculation of National Accounts in Germany (Bizonal Area); Kjeld Bjerke, National Income Calculated on Statistics of Production; Ernest M. Doblin, The Ratio of Income to Money Supply; Ch. Evelpidi, The National Income of Greece and its Composition; Antonio Giannone, Public Expenditure in the National Income of Italy for the Years 1938 and 1947; Corrado Gini, The Valuation of Commodities for Direct Consumption; and Helmut Meinhold, Analysis of the National Income in Western Germany.

one, two, or three years, edited by Phyllis Deane (Volumes II through VII) and Rose Knight (Volume VIII). Thereafter, an annual series was prepared that extended into the 1960s.<sup>4</sup>

The distribution of entries in the bibliography for 1937–47 across the IARIW's fields of interest is shown in Table 2 using an abbreviated version of the classification scheme in that volume. Although some modifications to the classification for the subsequent volumes complicate comparisons, some rough conclusions can be drawn about the share of bibliographic entries and thus about the work in the field reaching publication over the period covered. The share of entries for discussions of concepts and methods of national income and social accounts (I.A) fluctuated around 10 percent over the period through 1960. The share of entries for estimates (I.B) and analyses (VII) of national income and social accounts continued to be large although somewhat variable from subperiod to subperiod. Thus, overall the entries for work in and with national income and social accounts dominated throughout the early period. The shares for entries for discussions of concepts and methodologies and for estimates of both wealth (II) and size distributions (III) remained at around 10 percent each. Even if the shares changed little, some of the changes in terminology and classification structure

<sup>4</sup>The last annual report of which the author is aware is for the year 1964.

TABLE 2  
ENTRIES IN THE *BIBLIOGRAPHY ON INCOME AND WEALTH, 1937-47*  
(Distribution of the 1,509 Entries)

I. Social accounts, national income, and their variants	%
A. Discussion of concepts and methodology	11
B. Estimates	48
II. Wealth	
A. Discussion of concepts and methodology	...
B. Estimates	7
III. Distribution of income and wealth by size groups	
A. Discussion of concepts and methodology	...
B. Estimates	10
IV. Estimates of labour force by geographic area	4
V. International comparisons of income, wealth and labour force estimates	3
VI. Economic analysis centered on concepts or estimates of income and wealth	14 <sup>a</sup>
VII. Bibliographies	...

Note: ... indicates less than 1 percent.

<sup>a</sup>Mainly income.

indicate some changes in the field. "National plans" entered the classification along with "economic analysis" in the bibliography for 1948-49, and "input-output" was added as a separate classification in the bibliography for 1957-60.

## II. MILESTONES IN MEASUREMENT

The listing of the fields of the Association's interest in the by-laws and, somewhat more practically, the classification scheme used in the volumes of the *Bibliography on Income and Wealth* begin to identify the terrain within which milestones could be placed. Table 3 goes a step further by arraying, for each General Conference in the early period of the IARIW, the sessions organized and the topics discussed and/or included in *Income and Wealth*. It may be noted that input-output and balance of payments accounts were not prominent; neither field was the focus of a session for a General Conference. On the other hand, considerable attention was devoted to the topic of economic growth.

Below I suggest four milestones in measurement from among the papers published in *Income and Wealth*. In selecting these papers, I was guided by the idea that a "milestone" should represent the state of play in one of the fields of the Association's interest, with an emphasis either on evolution to that point of time or on setting the stage for future work.

### A. *Social Accounting: The Ground Recently Gained*

Richard Stone's paper "Functions and Criteria of a System of Social Accounting," presented at the 1949 General Conference, represents a milestone as a workman-like consolidation of ground only recently gained (Stone, 1951b). The paper opened with a brief description of social accounting. The description was similar to that forged in the appendix Stone had drafted for the League of Nations "Measurement of National Income and the Construction of Social

TABLE 3

THE EARLY PERIOD OF THE IARIW: GENERAL CONFERENCES, CONFERENCE VOLUMES, AND SESSIONS/TOPICS  
(Sessions underlined, with \* for those identified as first IARIW discussion; selected papers and annotations are in [ ])

General Conference	Cambridge 1949, 1st	Royaumont 1951, 2nd	Castelgrandolfo 1953, 3rd	Hindsgavl 1955, 4th	(1953, 3rd continued)	Arnhem 1957, 5th	Portoroz 1959, 6th		
Series, editor	I, Lundberg	II, Kuznets	III, Gilbert	IV, Gilbert & Stone	V, Kuznets	VI, Gilbert & Stone	VII, (preface by Kuznets)	VIII, Goldsmith & Saunders	IX, Deane
Fields of IARIW interest									
National income [and product] (see also Uses)		U.S. [see Growth]							
—Problem areas	[government]		<u>Government</u>			[capital gains]		[interest]	
—Intertemporal/deflation	[real income, real product]			<u>real product</u>					<u>deflation</u>
Wealth		U.S. [see Growth]		[U.S. balance sheet]				<u>national capital</u>	
Social accounting	... [also see Uses]			<u>... in capital account</u>		[input- output, see Uses]		[financial accounting]	* <u>financial accounts &amp; flow of funds*</u>
Distribution of income and wealth						* <u>... of income by size and household surveys</u>		<u>... of income by size</u>	
International comparisons and aggregations	[... of real income]		<u>compar- ability</u>	<u>... of product</u>					
Uses	[of social accounting]			* <u>in models, general; analysis</u>		<u>in models, specific</u>			
Economic growth		<u>growth, U.S.</u>	<u>growth, Japan &amp; France</u>		<u>growth, 6 countries</u>	<u>growth</u>	<u>growth, Canada</u>		<u>growth</u>
... in regions: estimates and uses			<u>income and product, developing countries</u>	<u>developing countries, East Europe, Italy</u>					<u>East Europe</u>
Statistical methodology			basic sources					[quarterly]	

Notes: 1. The Conference volumes were titled *Income and Wealth* except as follows: Series II, *Income and Wealth of the United States: Trends and Structure*; Series VII, *Canada's Economic Development, 1867–1953*; Series VIII, *The Measurement of National Wealth*; Series IX, *Studies in Social and Financial Accounting*.

2. An author's index to Series I–X appeared in Series X.

Accounts” in 1945, although the later description placed less emphasis on social accounting not being focused on building up a single total such as national income. Stone’s own recollections—he was a prolific writer—of this earlier time provide insight. He wrote that at the end of World War II, as he left government service, he took a break at the Institute for Advanced Studies in Princeton before taking up his duties as director of the newly established Department of Applied Economics in Cambridge.

“I intended to use my time there writing up my ideas on a social accounting system, . . . a thing I had wanted to do for years but had not had time for during the war . . . In Princeton, I met Alexander Loveday, the Director of Intelligence at the League of Nations, who wanted a paper on the problems of defining and measuring the national income and related totals for consideration by the League’s Committee of Statistical Experts . . . I soon had a memorandum ready and it was discussed in Princeton while I was still there by a subcommittee convened by Loveday. Their report was eventually published by the United Nations in Geneva in 1947, . . . with my memorandum as an appendix” (Stone, 1984).

Elsewhere he noted that the subcommittee considered his memorandum on the social accounting approach in detail, and the discussion showed that there was, with few exceptions, close agreement among those present. The report was circulated to governments in prepublication form in 1946 (Stone, 1951a).

In his paper for the 1949 General Conference, Stone defined a system of social accounting as a means of describing what is taking place in an economic system. (See Box 2 for a history of the term “social accounting.”) He stressed that this means is intended to be practical description, and it was a description to be expressed in terms of transactions between a set of accounts drawn up on the double-entry principle. Further, he saw an economic system as consisting of production, consumption, and adding to wealth, so that it was these activities that were to be described. A transaction, recorded in terms of money, is defined as the sum due from one point in the system to another point in the system, either between different transactors or internal to one transactor.

He then identified three functions of an accounting structure:

- to provide a statement of the empirical correlates of the theoretical concepts found interesting,
- to provide a catalogue of the information needed for economic analysis and a means of collecting this information through sampling surveys of the different types of transactions, and
- to provide a systematic summary of the economic transactions useful for teaching, analysis, and policy.

The first function was the one that required the most explanation. He noted that the accounting structure cannot settle questions of classification; an accounting structure can be set up to reflect any self-consistent set of principles of classification. He provided an example in terms of the treatment of death duties: if death duties are treated as a current receivable by government, because government normally thinks of them in that way, death duties cannot at the same time

be treated as a capital payable by persons despite the fact that they normally think of them that way; an accounting structure cannot settle which is appropriate treatment. This example, although trivial in itself, was important, he believed, because it pointed to an important source of disagreements among different researchers about the importance attached to the accounting approach.

Stone then considered the advantages of a system of social accounting under each of the three principal functions, again drawing on his earlier appendix and an article prepared by the chief architects of the U.S. system of accounts in reply to Simon Kuznets' critique of the accounting approach. These advantages focus on enforcing consistency, highlighting economic relationships, and permitting the calculation of residuals.

Turning to the structure of the accounts, he noted that no one transactor is concerned only with one of the three forms of economic activity. This suggested three separate accounts for each transactor. The first account brings together all transactions concerned with its production, setting off the costs incurred against the proceeds of the sales in a way that permits the measurement of income from productive activity. The second account brings together all the transactions of the transactor concerned with its consumption; by setting off expenses for consumption and direct taxation against income, saving is measured. The final account indicates the sources and uses of capital funds. Further, when the accounts of individual transactors are consolidated, as in a simple economy, the same structure holds. As he described it in Keynesian notation, the first account shows  $Y \equiv C + I$ , the second shows  $C + S \equiv Y$ , and the third  $I \equiv S$ . As he said, "the Keynesian equations when written down in a certain order represent the relationships between transactions occurring on each of the three forms of account which I have distinguished." Thus, Stone believed that, from the points of view of economists and accountants, the structure of the three accounts represented reality so that what remained to be discussed was reduced to the principles of defining the entries and the amount of detail to be retained in presenting the system of transactions.

Given the acceptance that the accounting approach subsequently found, the paper may seem to be presenting the obvious, and, in some parts, Stone's views may seem somewhat naive (as in the case of his advocacy of sample surveys to provide the needed source data). It does, however, provide an example of the powerful combination of theory and pragmatism that allowed Stone to work through thorny problems in a way that contributed substantially to economic statistics.

## B. *The Analysis of Economic Growth*

The attention paid to economic growth in the early conferences is associated, not surprisingly, with Simon Kuznets.

Later Kuznets described his move to the study of economic growth as natural progression: "[My studies] began with a group of related studies of factors—cyclical fluctuations, secular movements, seasonal variations—that affected the development of the American economy. Then they shifted to national income for a single country, the United States.

## BOX 2

### TERMINOLOGY: FROM SOCIAL ACCOUNTING TO NATIONAL AND ECONOMIC ACCOUNTING

“Social accounting” is listed in the initial by-laws of the IARIW as one of its fields of interest. Richard Stone credits J. R. Hicks with having coined the phrase (Stone, 1970). In his 1942 book, *The Social Framework*, Hicks wrote of a new branch of economics, kindled into life by the work of economic statisticians and by some of the newer developments of economic theory:

“If we want a name for it, it might be described as social accounting, for it is nothing else but the accounting of the whole community or nation, just as private accounting is the accounting of the individual firm” (J. R. Hicks, 1942, p. vi).

Stone adopted the term “social accounting” and used it widely—notably in the 1947 United Nations report and its appendix, which he later called the first handbook of social accounting. In his paper for the 1949 General Conference he provided this definition:

“A system of social accounting is a practical means of describing what is taking place in an economic system insofar as this can be expressed in terms of transactions between a set of accounts drawn up on the double-entry principle” (Stone, 1951, p. 1).

By 1963 Stone felt the need to draw a distinction between “social accounting” and “national accounting.” He referred to the standardized accounts published by the OEEC and the United Nations in the early 1950s as “national accounts,” and he described them as the obvious “stopping place” between the estimation of single aggregates, such as national income, and the construction of social accounts. A system of social accounts would have included an input–output table, flow of funds accounts, and regional accounts (Stone, 1970).

Richard Ruggles, in 1954, questioned the use of the term “social” to designate accounts that are primarily economic in nature and asked whether “economic accounting” might be used instead (Ruggles, 1957). Graeme Dorrance, among others, explicitly followed suit in preferring the term “economic accounting” (Dorrance, 1955).

Although “social accounting” is now seldom used, “national accounting” and “economic accounting” are both in use. Precedent and institutional preference may blur any substantive distinction between them.

Then they shifted to a wider view, using national income estimates and their components to compare the performance of different countries in many parts of the world on an international scale” (Fogel, 1987, p. 34).

Beginning with the second General Conference, Kuznets organized sessions, as well as contributed his own papers, on the subject of growth. According to the Introduction he wrote for Series II, a cooperative venture was initiated by the IARIW in 1950. The venture was supported by the Social Science Research Council, for which Kuznets chaired a Committee on Economic Growth from 1949–68. The venture was aimed at the assembly, review, and analysis of estimates of national income, wealth, and components for countries for which adequate data extended over at least a half century and thus permitted observation of longer term trends. Ultimately, the aim was to undertake comparative analyses across countries. Kuznets’ own paper at the second General Conference, on trends in income in the U.S., and Raymond Goldsmith’s, on trends in wealth in the U.S., appeared first because work in this field was more advanced in the U.S. They appeared together as the contents of Series II because the two papers presented a unit; shorter papers prepared for the second General Conference, on data for France and Japan, appeared in Series III. Six additional studies for as many

countries appeared in Series V, and O. J. Firestone's study of Canadian economic development, 1867–1953, appeared as Series VII.

Kuznets' paper in Series II, "Long-Term Changes in the National Income of the United States of America since 1870," was one that he later, for his Nobel autobiography, listed as among his most important works on growth. If only for this reason, this paper, then, can be taken as a milestone in this area of the IARIW's early-period activity. In seven sections, he reviewed the overall totals, population and per capita measures, labour force and product per workers, distribution by industrial origin, distribution by type and size of income, distribution by type of use, and flows across boundaries. Despite the paper's length of well over 200 pages, and with his well-known modesty, Kuznets noted that the paper was incomplete in that it failed to deal with several aspects of the structure of national income—its distribution by type of organization, by size of economic unit, and among regions (Kuznets, 1952).

Kuznets' paper, as part of Series II, was reviewed in at least four major journals. Excerpts from two of them help recreate the state of play.

"The analysis is always illuminating and should be read by every economist. Yet, in spite of the persuasiveness of arguments, an uneasy feeling persists. The author often reminds the readers of the roughness of the data, and though the reader is warned, he is not equipped to make independent judgments. Moreover, though the study is highly quantitative, no use is made of statistical inference" (Margolis, p. 444).

"For the most part, Kuznets does not make use of new statistical data. He mainly assembles statistics from his book, *National Product Since 1869*, and other well-known sources to construct various analytical measures of growth... Two noteworthy new calculations, typical of the imaginative spirit behind this study, are the estimates of consumer expenditures including leisure and the estimates of capital formation including expenditures on consumer durables" (Klein, p. 232).

### C. *International Comparability: More Emphasis on Sources and Methods*

Milton Gilbert, in his paper on "Statistical Sources and Methods in National Accounts Estimates and the Problem of Reliability," from his vantage point in 1951 as Director of Statistics and National Accounts at the OEEC, wanted to give impetus to the discussion of methodology by treating three questions. Two of these questions are of lasting general interest (the third dealt with the elements that raised the reliability of U.S. national income and product accounts by the end of the 1940s):

- What is the purpose to be served by descriptions of sources and methods?
- What can such descriptions contain to give the users of the data some understanding of reliability?

Gilbert noted that, up to that point, practically all the effort of those concerned with international comparability had been with questions of concepts, definitions, and forms of presentation. That work had led to, for example, the OEEC's *A Simplified System of National Accounts* in 1951. He believed—and it is this that marks this paper as a milestone—that it is necessary that much more

attention be given to the differences in the national income estimates of various countries that arise from the use of differing sources and methods. Furthermore, such a change in emphasis would be helpful to countries with less developed national accounts. Also, he believed that an international forum is almost a requirement for a productive exchange of ideas and experiences on problems of sources and methods, thus setting out a role for the IARIW as well as for international organizations.

Gilbert first discussed why the material on methodology, which he implicitly defined as data sources and estimating methods, had been rather limited. Primarily, the reason is that preparing methodologies is extremely tedious and time-consuming, as well as not having the same intellectual attraction as the theoretical and conceptual aspects. Also, it necessarily involves revealing skeletons in the closet—where estimates are weak and where dubious estimating techniques or guesses have to be used to fill gaps left by inadequate statistical sources. He argued against such self-consciousness; national accountants should not take responsibility for weaknesses in source data they work with. “But it should be made clear that reliability is basically a question of having good sources, and that the real effort required to improve national accounts data must begin with their statistical underpinnings.” Finally, he noted that there has not yet been developed any generally accepted viewpoint or standard for this kind of work.

To illustrate, he then described the tribulations of preparing methodologies in the U.S. Since it is literally impossible to “tell all,” decisions had to be made about the purposes methodological descriptions were intended to serve and, therefore, about what elements in them were to be given prominence. He set out the three purposes he saw as most important. The primary objective should be to indicate the reliability of the estimates.<sup>5</sup> He wrote:

“I believe that this is the only aspect of methodology which is really interesting to the general users of the data . . . Furthermore, I think it is only by adequate discussion of sources and methods that the question of reliability can be illuminated. This implies, of course, that the description of methodology should include a description and appraisal of the kinds of sources upon which the estimates rest.”

The second purpose should be to reveal the state of statistical sources—especially their adequacy for national accounting purposes—to those responsible for their collection and dissemination. He believed that the national accounts estimator is in a peculiarly advantageous position to look upon the various bits and pieces of statistical data as part of a system. The third purpose is to make possible an exchange of experience among those who have the job of making estimates. Hence, descriptions of methodology should provide a file from which one can find what methods have been useful to estimators.

Gilbert argues against indicating reliability by assigning quantitative measures of the margins of error to the various components and aggregates. Instead, he believed that what can be done to give users of the data an understanding of

<sup>5</sup>Gilbert did not, however, define “reliability.” From time to time he seemed to use “accuracy” as a synonym, but in other places he referred to “accuracy and reliability,” suggesting some difference in meaning.

their reliability is to provide a critical review of what the estimates are and how they are derived. This kind of review will be difficult to do. He provided a list of the aspects of the estimates that should be highlighted to indicate their relative reliability.

- *Differences among the components from the standpoint of conceptual clarity.* This aspect refers to differences in accuracy that attach to items that are represented by easily defined transactions (such as wages), on the one hand, and those (such as profits) that only emerge from a complicated and more loosely defined accounting process.
- *Quality of the records kept by the economic units from whom the basic data are collected and the kind of reporting system by which the basic source data are collected.* These aspects bring out whether units keep accurate or scanty records, whether uniformity in accounting records is likely (or imposed), whether the sources are censuses or samples (and the size and quality of the sample), whether returns are policed, whether character of reporting is likely to lead to biases, etc.
- *The estimating process that is required to pass from the data in the basic sources to the final estimates.* He noted that too often the estimating process adds an unknown element of unreliability to that of the basic original source so that the best that can be done is to make the assumptions used in the estimating process as explicit as possible.
- *The change over time in the source data upon which any estimated series rests.*

#### D. *An Integrated System of Accounts: An Emerging Vision*

Graeme S. Dorrance's paper "The Present Status of Financial Accounts: A Review of Recent Developments" was presented at the 1959 General Conference in a session billed as the IARIW's first session on financial accounts (Dorrance, 1961). The session was organized by Petter Jakob Bjerve, who had presented papers on financial statistics at the two preceding General Conferences. It appears that the subject was ripe for such a session; in that year, two meetings, one by the Conference on Research in Income and Wealth and one under the auspices of the Conference of European Statisticians, were devoted exclusively to financial accounts. Dorrance's paper represents a milestone, first, because it shows financial accounting moving from a specialty practiced by central bankers and their kin into the mainstream of economic accounting and, second, because it illustrates the emerging vision of an integrated system of accounts that includes financial accounts.

Dorrance's paper traces, in summary form, the development of financial and related statistics during the preceding decade. It is useful in setting the stage for this milestone to go a little deeper than his summary by drawing on papers by the group at the International Monetary Fund (IMF) with which Dorrance was working. In 1956, this group prepared a background paper for an informal session on "Recent Developments in Monetary Analysis" at the annual meeting of the Board of Governors of the IMF. At this session, three leading central bankers made presentations about the kind of analysis and underlying statistical framework used in their countries (Earl Hicks, with appendix, 1957). The background paper noted that monetary analyses, defined as statements of financial data

prepared for analysing monetary problems and monetary policy, varied widely among the countries preparing them. These analyses could be discussed together, however, because they shared the principle of sector statistics—that the economy is composed of several groups playing different roles and reacting differently to economic conditions as an organizing framework. Thus the point was made that monetary analyses were a subset of social accounting.

The IMF authors, in the background paper, had identified 58 monetary analyses, prepared in 41 countries, and to indicate the explosion of interest, noted that 16 of these 58 were first published in 1955 or 1956. These analyses were seen as having three origins: (1) in money and banking statistics; (2) as horizontal extensions of money and banking statistics to cover the financial institutions sector and also the accounts of other sectors for which data are relatively accessible; and (3) as the vertical extension of national income statistics to account for the means by which sector deficits and surpluses are financed. J. J. Polak graphically described the development of financial statistics: “Starting out from certain well-established bases—the statistics of banks, government finance, and the balance of payments—financial statistics have stretched their tentacles upward and sideways, and intertwined them, until they now cover, in principle, an area as broad as that of the national income and social accounting statistics—in principle, for the new area is only thinly held” (Polak, 1959, p. 1).

Dorrance, in his 1959 General Conference paper, noted that the wide disparity in the form of financial accounts contrasted with the situation in the national income and expenditure accounts. He interpreted this contrast as stemming from the fact that the widespread acceptance of fundamental opinions that is evident in national income and expenditure accounting is not found in financial accounting. At about the same time, Earl Hicks, in an oft-quoted statement, said: “. . . while the national income accounts are based on a usable economic theory, the national financing accounts, whose construction is under way or in prospect in many countries of the world, have no such basis” (Earl Hicks, 1959, p. 159). Thus, the wide range of financial accounts that Dorrance identified—from those that may be called monetary accounts (presenting analyses of money and reserve money), to those comprising all economic transactions—reflects differing views about the analytical significance of particular financial aggregates. Some approaches attach great importance to the quantity of money as a determinant of prices and employment, and thus give rise to monetary accounts. Some, while perhaps viewing money as important, view it as only a part of the wider structure of liquidity in the economy. Others, going beyond liquidity, are based on views that the economy is explicable only on the assumption that it is a system of fully interdependent variables. Income, consumption, investment, and changes in financial items are all considered interdependent, and any individual transaction is only one in a series of transactions, and so a set of financial accounts—or any other set of accounts—probably should not be prepared in isolation.<sup>6</sup> Some go

<sup>6</sup>However, this statement should not be taken as suggesting that more limited accounts are not useful. First, Dorrance noted that monetary accounts are typically available more quickly and more frequently. Second, substantial information, if properly assessed, may be derived from a statement of the accounts of financial institutions. In particular, in less complex economies, the data on financial institutions and government may provide an approximate statement of the range of financial assets and liabilities in the community.

further to urge that balance sheet criteria be incorporated into economic theory and, as a consequence, argue for balance sheets by sector as essential parts of economic statistics.

Dorrance also reviewed the statistical problems in developing financial statistics, and in particular the more serious problems that arise in the construction of financial accounts that are integrated with the national income and expenditure accounts. He mentioned three general problems: the determination of the form of the main statement linking the income–expenditure accounts with the financial accounts, linking in essence a production statement and a receipts–payments statement; the determination of the sectors to be identified, a problem related to the first and centering on the treatment of financial and quasi-financial entities; and the so-called “split personalities” encountered in accounting for self-employed persons, rent of owner-occupied homes, and allocation of current income of financial institutions. He identified the extent of available data and the problem of valuation as the two most important problems for balance sheets.

As of 1959, most of the published financial accounts were measures of flows rather than stocks. Some were independent analyses, but the majority were attempts to expand the existing systems of economic accounts to comprise both income–expenditure accounts and accounts of concurrent financial transactions. Dorrance concluded by suggesting that if the status of work in financial accounting could best be regarded as one of expectancy rather than general agreement, it would be reasonable to expect progress on the development of a more general theory of the role of finance in the economy and solution of the purely statistical problems that arise in extending income–expenditure accounts to develop financial accounts.<sup>7</sup>

#### E. *Milestones Missed?*

No doubt some combination of a longer paper, a more determined attempt to identify papers from across the full range of the Association’s interests or presented by more of the Association’s early leaders, and a different set of personal experiences would have led to suggesting additional and perhaps different milestones of measurement in the Association’s early period.<sup>8</sup>

To start with, perhaps there should have been a milestone to represent the “wealth” in the Association’s name. A paper by Raymond Goldsmith, either his paper on wealth that was a companion to Kuznets’ on income in Series II or his paper on national balance sheets in Series IV, could have marked the advances in empirical work. Alternatively, the summary survey of national wealth estimates by Goldsmith and Christopher Saunders, as editors of Series VIII, *The Measurement of National Wealth*—with the general review of the estimates of wealth, prepared by Th. Van der Weide, covering 18 countries that accompanied it—would have admirably met the criterion of marking the state of play.

<sup>7</sup>Almost a decade later, Dorrance concluded that a consensus was emerging that a set of sector financing statements and balance sheets, based on a monetary survey and incorporating liquidity criteria, can contribute to an understanding of the economy. See *The Role of Financial Accounts, Review of Income and Wealth*, Series 15, No. 2, 197–208, June 1969.

<sup>8</sup>After my selection I was struck by the fact that I had the privilege of meeting three of the four persons whose work I describe: Simon Kuznets, Richard Stone, and Milton Gilbert.

To represent methodological issues in measuring income and product, the paper by J. B. D. Derksen for the 1949 General Conference could have been taken as a milestone in marking the “striking differences” in the methods used by the roughly 20 sets of national estimates of real national income that had been prepared and as a statement of the challenges that lay ahead. Another possibility would have been to use one (or more) of the papers from the 1959 session on deflation of national accounts to mark why this subject was described on the dust jacket of Series IX as “highly controversial” and set the stage for the advances that are chronicled in the *1993 SNA* as a case study of progress on the research agenda (*1993 SNA*, p. xxxix). Still focusing on methodological issues, a paper might have been identified, such as the one by Milton Gilbert and Irving B. Kravis in Series IV, within the series that laid the ground for inter-country comparisons of income and product that do not use exchange rates to convert national currencies to a common unit.

Given the long history of work on income size distributions and the interest of several of the Association’s early leaders in the field, a paper might have been selected from among those presented at the 1955 General Conference when the Association held its first organized session on the topic.<sup>9</sup> Finally, a point might have been made about the richness of the experiences represented at the General Conferences by including a paper about the issues in the research in income and wealth that are of particular importance in developing countries.

Indeed, this early period was rich and offered much. In the spirit of the Association’s first 50 years, I am sure we could have a lively discussion of the papers that others would include among the milestones of measurement in this early period.

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