PREFACE

By Simon Kuznets

The present volume grew out of a long paper originally submitted to and discussed at the 1953 meeting of the International Association for Research in Income and Wealth, held at Castelgandolfo, Italy. In the years that have elapsed since, it was possible for Dr. Firestone to revise, supplement, and improve many of the estimates.

This volume is the last published instalment of the co-operative enterprise in the study of long-term economic growth which was initiated by the International Association in preparation for its 1951 meeting, and is discussed in the Introduction to *Income and Wealth, Series II*.[1] Two other papers, one on France and the other on Japan, were published in *Income and Wealth, Series III*.[2] Another group of six papers for that many countries was published in *Income and Wealth, Series V*.[3]

The enterprise, whose products we have listed, including the present volume, was made possible by the interest of the scholars in the several countries, who undertook the investigations in addition to or as part of their otherwise heavy commitments. There is an obvious limit to such labours of love; and one can only express deep appreciation of the contributions thus made to the stock of our knowledge on the quantitative aspects of economic growth of nations.

Further work in the field continues, under the auspices of the Committee on Economic Growth, Social Science Research Council (U.S.A.). With the assistance of this Committee, it was possible to initiate additional studies in several countries. These are manned by scholars who can devote full time to the task, and who can therefore push estimation and analysis further than has been possible within the limits of the International Association's co-operative enterprise that has now come to a close.

[1] *Income and Wealth, Series II*, edited by Simon Kuznets, published for the International Association for Research in Income and Wealth by Bowes and Bowes Ltd., Cambridge, 1952, pp. 328.

[2] *Income and Wealth, Series III*, edited by Milton Gilbert, published for the International Association for Research in Income and Wealth by Bowes and Bowes Ltd., Cambridge, 1953, pp. 261.

[3] *Income and Wealth, Series V*, edited by Simon Kuznets, published for the International Association for Research in Income and Wealth by Bowes and Bowes Ltd., London, 1955, pp. 242.

II

In the Introduction to *Income and Wealth, Series II*, I attempted to indicate the possible usefulness of long-term estimates of national income, wealth, and their components in the study of economic growth – as well as in the handling of many conceptual and measurement problems that beset income and wealth accounting for current and short periods. At this juncture, it may be useful to deal briefly with the difficulties encountered in the preparation of such estimates – as a proper background against which to appraise the contributions already made by participants in this enterprise and to judge the likely fate of the results in the process of further use.

Measuring the total net (or gross) product and wealth of a nation's economy, as well as the proportional magnitudes of components in a variety of distributions of the national totals, means in essence finding the quantitative counterpart of a system of concepts evolved in the theoretical analysis of economic processes. We deal with national income because we view the nation's economy as a roughly unified system of interrelated parts. The various components, whether they be sectors of industry, the several factors of production, the various types of use of final products, are viewed as parts tied through a network of market relations. This does not imply that a nation's economy is completely independent from the rest of the world; but it does imply that the ties that bind the various parts of a nation's economy are stronger than those among the several national units. Above all the concepts for which we seek quantitative counterparts, whether they be national aggregates or components, are tools of economic analysis; and are formulated and distinguished in economic theory, i.e. in what we hope is rigorous and consistent treatment of economic processes.

Economic analysis is pursued by economists. But the basic data needed to provide the quantitative counterpart of economic concepts are not produced by economists at all – with exceptions so few as only to strengthen the rule. Unlike the situation in experimental natural sciences, where most and perhaps all of the experimental data are produced by or under the immediate direction of professional scholars, basic data relating to social processes (economic among them) are produced by nonscholarly agencies alone. Whether it be the government, the

main producer of such data, or private agencies, such as financial institutions, manufacturers' associations, trade unions, and the like; whether the data are collected largely for information purposes as is the case with the basic censuses, or are a by-product of administration as in the case of much of the tax, social security and foreign trade data – it is not the scholar who decides what data to collect or when and how to do it. Nor does the scholar decide how the data so collected are to be summarized and how they are to be published for wider use. All this is true not only of statistics: it is also true of qualitative information. All of it is costly, far beyond the command of the individual scholar; little of it is likely to be provided on request, unless this request comes from an agency charged either with public interest and hence power, or with group interest recognized by the would-be respondent. And even if the scholar, in some fortunate circumstances, is asked for advice, his contribution is only one among many much more powerful pressures that play upon the production of social data.

This is hardly the place to formulate a theory of production of social information or of economic statistics, even were I to know enough to make the attempt. But one may admit that the fact that data are not produced by professional analysts need not mean that the definitions, coverage, quality, comparability, and other characteristics are so badly distorted that the data are completely useless for effective analysis. After all, the decisions that lead to the accumulation of these data are based upon recognition of the major aspects of our society, of the forces behind them, and of the problems with which social intelligence and broad policy will have to deal. And it is these processes, forces, and policy problems that the economic analyst deals with, even if in much more precise definition and with greater rigour in his thinking. Were it otherwise, the gap between the stock of primary economic data and economic analysis could not be bridged. Yet the gap is there, and much work is required to bridge it in such a way that the data can be brought to bear on the concepts of economic analysis and on the hypothesis in the formulation of which these concepts are employed. One has to pass from production of brick and pig iron to capital investment; from corporate profits as reported in business accounting to returns to enterprise; from series on interest charges to price of credit; from output of bread, tea, clothing, etc., to a measure of

ultimate consumption; from a miscellany of production, price, and consumption series to national product. The more comprehensive, articulated, and refined the concepts are – and these aspects are most important for strengthening the analytical structure – the greater the gap that has to be bridged.

Several corollaries follow. The first and most obvious is that social and economic data cannot be used in their raw form. The casual dipping in the statistical abstracts is much like anecdotal references to some single firm, entrepreneur, or some other distinctive but highly specific bit of history: the result may be helpful for interesting conversational gambits, but if they create the illusion that they provide empirical bases for any statement beyond that in the title of the series, they are worse than nothing. Each item of the raw data must be examined for the relevance that it has to some formulated concepts in economic analysis, and such relevance appraised. Even the most modest demand thus made upon the raw data often yields unexpected results: series labelled production turn out to reflect shipments and thus exclude flow into inventories or into the plant's own use; wages paid turn out to be only part of the compensation of wage earners; the values attached to commodities in some foreign trade statistics prove to be arbitrary rather than market prices; and so all the way down the line.

Second, it follows that a vast task is involved in providing the empirical counterparts to economic concepts. This is not just a matter of putting flesh on the skeleton of theory: it is actually securing some notion of how long the bones are in relation to each other, and how much variation there is in their respective size and hardness over time. And in dealing with the basic economic concepts, which characteristically refer to a country's economy, the economic analyst can hardly rely on introspection or the kind of casual observation that he can make as an individual spectator. He just has to have the raw data provided for him by some competent agency, and then he must struggle to make them more relevant to his analytical notions.

Third, because of the very nature of the task, it requires knowledge of the conceptual structure of economic analysis; of the nature and character of the data, either primary or derived; of the social institutions in the country, which are reflected in the data and may lend them some distinctive meaning; and of historical conditions which characterized the time span under

study, and whose effects determine partly even cross-section relations at a given point of time. No single person can hope to attain mastery in all these fields – certainly not to the point where the necessary judgments, and there are many, would be infallible. As a consequence the first rule in the field is to try to state clearly and precisely what you have done, and the judgments you have made – so that your errors can be seen and corrected.

Finally, given changes in the supply of data, in the social institutions that condition them, and in the very conceptual framework, the task of bridging the gap between raw data and economic analysis can never be definitively completed. Even if for a given period no new data emerge, whatever new we may learn for a later period can lead us to revise the judgments and hence the bases by which the gaps in the data for the earlier period have been bridged. One can hope for a progressive extension of the scope of coverage, i.e. of the variety of experience that is measured or otherwise reflected in the empirical counterpart of economic analysis. But whatever has been done is not quite final: it is subject to further revision, if not in major outline then in details. Indeed the very use of what has already been done as a stepping stone for further analysis, is most likely to reveal inadequacies or gaps that would suggest further breakdowns and further refinements – the need for which could hardly have been foreseen at the beginning.

III

In the Introduction to *Income and Wealth Series II* I dwelt upon the promise which the accumulation of long-term estimates of income, wealth, and their components, offered in providing a secure basis for tested knowledge in the field of economic growth. In the present Introduction I have emphasized the difficulties which the preparation of such estimates had to overcome. It is against the combined background of the promise and of the cost that we must view the attempts in our enterprise, the results of which were published in the earlier volumes; and particularly the most elaborate set by Dr. Firestone in the present volume. Here is a record that extends over more than eight decades of growth – from the beginning of Canada's existence as a unified political entity, and spanning the move-

ment from a largely rural and small scale economy to one in which the proportion of manufacturing and other large scale activity puts it in the rank among the most advanced countries. It is an attempt to provide a comprehensive coverage of the nation's long-term trends in population, national product, industrial structure, distribution between consumption and investment, the share of foreign trade, the contribution of government – all within a reasonably consistent statistical framework and with sufficient continuity over time to reveal the time pattern of the broad lines of development. The author's primary objective has been to tell the story of Canada's economic development in terms of national product and national wealth; and to give scholars in Canada and in other countries an opportunity to learn more about the rate of expansion and changing structure of this young country, which has now reached the stage of being one of the world's leading industrialized nations – the sixth in terms of national income originating in manufacturing.

Even readers who have never had the experience in the task of mobilizing a variety of raw statistical data in the construction of comprehensive aggregates and structural estimates, can easily visualize the efforts involved. It is not merely a matter of judging what data to use or how to use them. It is much more an exercise in judgment in how to modify the data when this is possible; and how to overcome the gaps when basic information is scanty.

The task could hardly have been feasible were not Dr. Firestone in a position both to build on the work of his predecessors in the field (an historical review of whose work is provided in Part IV); and to use, for recent years, the greatly improved estimates prepared by the Dominion Bureau of Statistics. But this is the usual rather than the unusual situation in our, as in many other fields of empirical research: we stand on the shoulders of our predecessors and lean on our contemporaries. And we hope that our successors, by using the results of our work, will stand on our shoulders and lean on their contemporaries.

For one who, like myself, is not familiar in detail with Canada's history and social institutions, and Canadian statistics, it is difficult to appraise this study in all its ramifications. But two observations can be made safely. First, by their very scope of coverage, the estimates and analysis represent a significant

advance over what we had before Dr. Firestone began his work – for no continuous series either for the aggregates or for the major breakdowns were available for that long a period, nor has Canada's long-term growth been appraised previously within the framework of the national accounts. Some of the estimates are of necessity tentative and could probably be revised by the author himself were he given more time. But when long and informed effort has been devoted to the handling of basic data, the revisions are bound to be largely those of addition and refinement, not of altering the major results.

Second, the revisions of these and other estimates in the series are likely to come – we hope from the use of these estimates in further analysis; and the sooner they come, the more welcome they will be. For they will be a clear sign that the work embodied in the estimates, in this and the other volumes, has been of sufficient interest to others to warrant careful scrutiny; and even better, used in comparative and other type of analysis to probe the relevance of the estimates to some hypothesis. Revision will then indicate that the work of Dr. Firestone and the others has provided stepping stones for further work in the field – an indispensable objective for an activity in which only cumulative and co-operative effort can yield significant results.