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## PREFACE

THIS volume is intended primarily as a contribution to materials for the study of the business cycle. It makes no attempt, however, to analyze the results obtained, or to relate them to other cyclical phenomena. The scope of the present volume has been deliberately restricted in this respect, because it forms part of a wider investigation upon which the author is engaged, and in the course of which appropriate use will be made of the series presented here. But the character of any set of estimates is conditioned partly by the purpose for which they are constructed. In order that the reader may understand the reasons for the treatment adopted here, some indications must be given at the outset of the limitations imposed upon the present study by the requirements of this wider investigation.

The most comprehensive way of measuring fluctuations in economic activity would undoubtedly be, could we do this, through their effect upon the entire output of all those goods and services which are economically disposable—through their effect, that is, upon the social product as a whole. Unfortunately the social product, properly regarded, is a concept of some difficulty, and attempts to interpret it accurately from a statistical viewpoint are apt to lead to considerable equivocation. On the other hand, for many purposes income and outlay totals, of definite if arbitrary coverage and inclusiveness, can be made to do duty as substitutes, and treated as if they were measures of the social product itself. It is with totals of this sort, all of which can be regarded as

actual or imputed money flows, that I shall be concerned in the present volume.

In the analysis of the business cycle such income and outlay totals are significant mainly because they can be broken down into components which bear a fairly direct relation to the concepts most frequently employed in recent work in the theory of industrial fluctuations—concepts such as income and consumption, profits and investment. Between these quantities multiplier relationships, which for statistical purposes are perhaps best interpreted as regression coefficients, can be computed only if we have adequate measures of outlay and income, and of their constituents. The approach to problems of the business cycle via the study of national income and outlay is not an entirely novel one. But it is an approach which suffers to a peculiar degree from a well known difficulty. For statistics of national income, and of similar measures of the national product, are rarely available in any other form than annual totals.

Now from the standpoint of business cycle studies annual totals have at best a strictly limited usefulness. Much may happen inside twelve months. Parts of the same calendar year may belong to two (or even more) entirely different phases of the business cycle. When annual figures are used as a basis of inquiry cyclical turning points are sometimes obliterated; cyclical amplitudes are diminished, durations disturbed and patterns transformed; while the calculation of the lag between one series and another becomes an exceedingly crude operation, if it can be carried out at all.<sup>1</sup> In order to draw a significant line of regression it becomes necessary, if annual data alone are available, to consider an inconveniently extended period of time.

<sup>1</sup> The problems which arise when annual data are used in the analysis of the business cycle will be discussed at length by Wesley C. Mitchell and Arthur F. Burns in a forthcoming volume on *Methods of Measuring Cyclical Behavior*.

The alternative to the use of annual data has usually involved a serious sacrifice of comprehensiveness for the sake of temporal detail and definition. Numerous series relating to particular activities, to isolated parts of the economic process, are freely available on a quarterly, monthly, weekly, or even daily basis. Selection of such of these as have relevance to particular problems has made possible the fruitful study of many aspects of economic fluctuation. An extensive investigation based upon a large number of such series, drawn from all parts of the economic process and from several countries, has led, under Wesley C. Mitchell and Arthur F. Burns at the National Bureau of Economic Research, to the construction of measures of cyclical behavior which have a comprehensiveness of their own.

It remains true that the concepts met with in theoretical discussions of economic fluctuation refer predominantly to aggregates—to measures of the national product, or of its constituents. We have here a row of empty boxes, or more accurately a row of boxes which in the past have been given statistical content but once a year. The present volume constitutes an attempt to fill these boxes at more frequent intervals. Its purpose is to place the whole of the annual data for outlay and income upon a quarterly basis, so far as it is possible to do so. In fact such an undertaking involves doubts and difficulties which surround the outcome with a rather formidable margin of uncertainty. The results must be regarded, therefore, as provisional, and the entire project as a survey of the field rather than a definitive study.

The first task was naturally the construction of annual series for outlay and income on a comparable basis. Most of the data needed for this purpose are readily available in the form of measures of income and capital formation compiled at the National Bureau by Simon Kuznets

(Tables 1 to 5 inclusive). The only important series of new *annual* estimates made directly for the present study relates to services rendered to consumers, a substantial constituent of outlay. The derivation of this series is discussed in Appendix A. While practically all the annual series have been placed on a quarterly basis for the entire period (Tables 9 to 18), the quarterly estimation of profits (here called "residual income") and of inventory changes proved much the most difficult part of the undertaking. The quarterly data on profits are discussed in Appendix B and those on inventory movements in Appendix C. The new estimates in these fields will be found in Table 28 (Chart VIII) and Table 34, respectively. The former, however, are almost certainly more reliable, and will probably be of greater interest, than the latter.

The plan of the study is briefly as follows. Chapter I presents an introductory review of conceptual problems arising in the treatment of outlay and income and their quarterly derivation. In Chapter II annual estimates are derived for outlay and income, on a comparable basis suitable for further analysis. In Chapter III these annual estimates, regarded as independent measures of the national product, are compared; the extent to which this comparison gauges the precision of the estimates of the level of the product is discussed, and estimates of error are computed on various alternative assumptions. Chapter IV is devoted to the derivation of quarterly estimates of outlay (Table 11 and Charts I and II) and Chapter V to quarterly estimates of income (Table 18 and Charts III and IV). In Chapter VI a comparison of the movements of the quarterly series for outlay and for income is undertaken (Table 20 and Chart V). The discussion then centers upon the question as to which series affords the more reliable indicator of short run changes in the national product.

The primary task of the volume is to furnish data of a kind not available up to now: since analysis of the results obtained lay outside the scope of the study, the book is devoid of any broad generalizations concerning outlay and income, their behavior during the business cycle, or their determinants from one period to another. Within these limitations, since outlay and income are separate measures of a single quantity—the national product, appropriately defined—the ultimate goal of a study such as this must be to offer a single quarterly series for the national product, broken down both by type of outlay and by type of income. A major object of the present monograph is therefore to explore the feasibility of constructing a single quarterly series of this character. In the following pages no such single series is in fact offered, because it is impossible at present to compute. In other words no satisfactory reconciliation of outlay and income estimates can yet be made. The deficiencies of data which currently prevent this reconciliation, and the sources of error in each of the two sets of estimates, are reviewed at some length (Chapters III and VI). Finally, it appears that the comparison of the outlay and income totals, regarded as independent estimates of the product, throws light upon the precision to be expected in estimates of this kind. We shall find that estimates of income are perhaps more accurate than estimates of outlay, although this cannot be categorically asserted. Errors in the totals of 10 to 20 percent are not improbable. Our main need is to improve the underlying data in certain fields where they are still very deficient. These fields are primarily gross and net income in the service industries, net income in wholesale and retail distribution, inventory movements, and the receipts and expenditures of State and local governments.

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