## PREFACE

This volume on business cycles in the United States of America is the third of a series giving the results of an enquiry into the problem of the recurrence of periods of economic depression upon which the League has been engaged for some years.

The enquiry has been divided into two stages. The first was to examine existing theories with a view to ascertaining what they had in common, the points at which differences of opinion arose and, in so far as possible, the causes of those differences; the second, to confront these theories with the historical facts — to subject them, in so far as these facts can be quantitatively expressed, to statistical analysis, and in so far as they cannot be so expressed, to compare them with the recounted records of the past.

The first stage was completed with the publication of a book, of which Professor Gottfried von Haberler was the author, entitled *Prosperity and Depression*, a revised and enlarged edition of which has just appeared; the second was initiated by the publication this year of an introductory volume<sup>1</sup> by Professor J. Tinbergen, in which the statistical methods which it was intended to employ were explained. In the present volume, also written by Professor Tinbergen, with the assistance of Dr. J. J. Polak, the post-war data for the United States have been employed for the purpose of subjecting to statistical test, as originally proposed, certain of the theories summarised and expounded by Professor von Haberler.

<sup>&</sup>lt;sup>1</sup> Statistical Testing of Business-cycle Theories, Vol. I: A Method and its Application to Investment Activity, League of Nations, Geneva, 1939.

The phenomena of the trade cycle are complex, various forces acting and reacting on each other and constituting in the aggregate a sort of vital organism. In order to understand the manner in which this organism functions, an elaborate system of mathematical analysis is required. The system employed is briefly described in the introduction to this volume and in somewhat greater detail in Professor Tinbergen's earlier volume.

This is not the place to enter upon any discussion of methodological problems; but it may be well to draw attention here at the outset to one point. The system of analysis employed cannot do more than submit preconceived theories to statistical test. The economist, and not the statistician, must in the first place indicate what, in the light of logical reasoning from ascertained facts, would appear to be the probable causal relationships. The statistician can then examine, with the statistical data and the mathematical tools at his disposal, which of the possible combinations of causes indicated seems in each particular case to give the best fit. He cannot do more than that. It is, indeed, for this very reason that the enquiry has been conducted in two stages — first, an analysis of theories, and secondly, a statistical testing of those theories.

But in practice in the process of testing, in the selection of each one of the "explanatory" factors employed in the various diagrams in this volume, problems of pure economics necessarily arose for consideration before the mathematical analysis could be attempted.

Owing to the nature of this problem and the consequent complexity of the form of analysis employed, a considerable part of this book will present serious difficulties to the non-mathematical reader. His attention may therefore be directed to the introduction, to the conclusions contained in Chapter VII and to the diagrams, which, with the key contained in Appendix A, are largely self-explanatory.

The results obtained can, of course, claim no sort of finality; they relate to one country only, and to a relatively brief period of time during which the economic structure was undergoing very rapid changes. It is proposed to supplement them by a

parallel study for the United Kingdom. But it is hoped that it may prove possible, while this parallel study is being conducted, to subject to closer investigation certain points in connection with the work already done, to employ in certain cases monthly or quarterly data instead of annual data and to check certain results regarding post-war events by studies of previous experience.

The manuscript of this volume has been sent to a number of statisticians and economists in different countries who have been good enough to comment on it. In addition, it has been possible to arrange for meetings of small groups of experts to discuss methods and results at various stages of the work. Thanks are due to all those who have been good enough to help by their criticism and advice.

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