PREFACE

This investigation was made in the years 1939 and 1940. It represents an attempt to supplement the studies on United States business cycles 1919—1932, published by the League of Nations in 1939 ¹). Such a supplement seemed interesting because, on the one hand, the period and country studied in that volume show peculiar features not characteristic of the normal business cycle and, on the other hand, the period 1870—1914 seemed more to approach what is commonly felt to be the "normal" cyclic movement. The big handicap was, of course, the quantity and the quality of the statistical material available for the United Kingdom between 1870 and 1914. Because of the dubious character of the material even more caution as to the interpretation of the results is necessary than in the case of the League study. This withheld me a long time from publishing this study.

Since it was written some attempts have been made at improving the statistical material, notably by Mr Prest²). Moreover, the general statistical methods to test hypotheses have been considerably developed: the method of simultaneous equations and the variate difference methods may be quoted. Valuable applications on some of the relations for the U.K. between 1870—1914 were made by Mr Pesmazoglu³).

If, in the end, I nonetheless decided to incur the risk of severe criticism by the publication of this piece of work, it is because I felt that no alternative positive models had been presented so far which at least fulfil the modest condition of not being contradictory to the facts. In addition, some more recent work seems to confirm at least some of the results found, e.g. the low elasticities for a number of demand functions and the high elasticities for some supply functions. Moreover, the attempt made in chapter VIII to give a verbal interpretation of the mathematical model seemed to be worth while being submitted to my colleagues in this field of research. Finally, at least parts of the model seemed to be useful starting points for further discussion, as shown by Mr Pesmazoglu's work. May others too be stimulated to improve my attempts!

Several chapters of this book, in particular chapter I and in a sense also chapters II—VI, I fear, are dull literature, quite as dull as a number of useful things in daily life are. The best remedy is not to read them

¹⁾ J. Tinbergen, Statistical Testing of Business Cycle Theories, II; Business Cycles in the United States, 1919—1932, League of Nations Economic Intelligence Service, Geneva 1939.

²⁾ A. R. Prest, "National Income of the United Kingdom, 1870—1946"; The Economic Journal LVIII (1948), p. 31.

³⁾ J. S. Pesmazoglu, "A Note on the Cyclical Fluctuations of British Home Investment, 1870—1913", Oxford Economic Papers, Vol. 3 (1951).

and, in fact, they are intended more as reference chapters where all the material and the work done are accounted for. That these chapters, nevertheless, have been written and even been placed ahead of the other chapters, may be explained by the nature of the investigations involved: they are the basis of the other chapters. They therefore have to be read by those who want to master the method used and by those reviewers who want to find the weak spots. The other readers may be invited to read the happy ending first; some indications are given for them at the end of this Preface. A few words on the nature of the method used may precede.

The explanation of the business cycle phenomenon and the determination of the probable effects of various types of business cycle policy are complicated problems. Their subject matter consists of a great number of phenomena, showing innumerable interrelations of very different and changing strength. It is no easy task to keep all these relations in mind and to find their combined effects by pure reasoning. The necessity for a mental administration of all these phenomena and relations is strongly felt by all who try to tackle these problems in a rigorous way. One form of such an administration is the mathematical treatment of these problems.

Even with the help of such an administration there is a need for simplification: non-essential details must be eliminated as soon as possible. Only a sort of skeleton of reality is workable. In this model the relative size of various phenomena and the relative strength of their relationships must be chosen as close to reality as possible. This is best attained with the help of statistical information. Hence a combination of mathematical treatment and statistical measurement, i.e. an econometric treatment, presents itself as natural.

The author has tried out this method by constructing econometric models of the business cycle mechanism for the United States, 1919—1932 and for Holland, 1923—1937. The present investigation is a third example, relating to the classical period and country of business cycle research: the United Kingdom, 1870—1914.

The method is subject to various qualifications and limitations which have been pointed out to the reader as far as that seemed necessary for a better understanding. Some fundamental notions and some controversies that are to be found in literature have not, however, been treated again, in order to avoid too much repetition.

In a sense models as the one presented are meant as examples rather than as final results. The author repeats the hope, previously expressed, that others will present different and better examples.

The number of questions arising during the treatment that proved not to have been considered in existing literature is great. It has not always been possible to answer these questions and thus this book may raise more questions than it has solved.

The statistical material available for the United Kingdom 1870—1914

is — euphemistically expressed — only rough. The author has tried to bring together all that he could find and has attempted to correct it with regard to some generally known deficiencies. The only excuse he has for working with this material is that most of the well-known authors on British business cycles had no better, possibly even worse statistical information at their disposal.

Readers interested in only part of the material may be guided by the following indications. The statistical data are described in chapter I and the tables; the details of the economic theory and of the multiple correlation analysis are to be found in chapters II to VI, inclusive. The subjects treated in each of these chapters may be found in the table of contents. A survey of the chief characteristic features of British economy as found by the correlation analysis is given in chapter VII. Conclusions with regard to the model suggested by our analysis are also to be found in chapter VIII and statements on the effects of various types of business cycle policy in chapter IX.

The author would be obliged for all observations the reader may feel induced to make.

J. TINBERGEN.

The Hague, May 1951.