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STUDIES IN BUSINESS CYCLES

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INVENTORIES AND
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*INVENTORIES AND
BUSINESS CYCLES*

with

Special Reference to Manufacturers' Inventories

MOSES ABRAMOVITZ

Professor of Economics, Stanford University

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

*To My
Mother and Father*

PREFACE

THE AIM AND METHOD OF THIS BOOK need, I think, little explanation. As nearly as I could, I have tried to discover, by studying statistical records, how inventories have moved during business cycles and what influence they have had on business activity. And as far as possible, the theories about inventory movements and their influence to which the work leads are generalizations from recorded experience. Needless to say, the qualifying phrases in these sentences are important. Hypotheses and preconceptions are necessary guides to all research and inevitably leave their traces on its results. Statistical records are never wholly adequate, and this difficulty is especially serious for inventories. The validity of my conclusions will be settled only when put to the test of later experience.

Most of the book is devoted to a study of the stocks held by one important branch of industry, manufacturing. The reasons are partly that the data for other branches are less plentiful and partly that the study of manufacturers' stocks itself is so complicated. I have tried, however, to establish the typical behavior of total stocks and to show the gross similarities and differences between inventories held by manufacturing industries and other branches of the economy. Moreover, the analysis of manufacturers' stocks has yielded many suggestions that seem useful in understanding the behavior of stocks in the other branches. Finally, a substantial part of the work on cycles in the pace of inventory accumulation and liquidation is concerned with total business inventories. The general title of the book, therefore, seems justified.

This study was undertaken at the suggestion of Wesley C. Mitchell and Arthur F. Burns, and it is hardly possible to overstate what it owes to their help and to the atmosphere of free inquiry and scientific caution they have created at the National

Bureau of Economic Research. As an introduction to the subject, I had the benefit of an unpublished chapter on stocks by Professor Mitchell, a fragment of the mass of unpublished studies on business cycles which his death has left unfinished.

A number of talented assistants contributed immeasurably to the progress of the study. My principal helpers were Evelyn Firestone and, for almost the entire period of the study, Carolyn Cahn Landau. Later Judith Moss and Helmut Frank joined in the work. I owe a special debt to Fred Lynn who, with the help of David L. Rolbein, carried through most of the laborious job of revising the price indexes used to adjust inventory data in current values for changes in prices. I am very grateful also to Regina S. Sands who checked the manuscript, to Erika Teutsch who prepared the index, and to Hanna Stern who checked and improved the accuracy of the catalogue and description of statistical series in Appendix G.

The work owes a great deal also to the members of the National Bureau's division of business cycle studies. Many of the series were compiled or checked by Karl Laubenstein, Frances Goldberg, and Hanna Stern. Sophie Sakowitz and the late Denis Volkenau were mainly responsible for the computation of seasonal and cyclical measures. In this work Julius Shiskin's advice was of great importance in solving the many technical problems that arose. The numerous charts were designed and executed by H. Irving Forman with his customary clarity and skill.

Many of the original data were supplied by the U. S. Department of Commerce, and I gratefully acknowledge the help of Louis Paradiso, Frederick C. Murphy, and Irwin Friend who put the files of the Department at my disposal, gave me many unpublished figures, and patiently answered many questions about the reliability and significance of the data. The National Industrial Conference Board also kindly consented to the use of its data. I owe a debt too to George O. May and Robert D. Gracie of Price, Waterhouse and Co. for their help with accounting questions involved in the interpretation of inventory records. The members of this firm supplied answers to an extensive questionnaire concerning inventory accounting procedures in various industries.

My work was furthered at every stage by the critical attention

of my colleagues on the staff of the National Bureau: Millard Hastay, Thor Hultgren, Ruth Mack, Frederick C. Mills, Geoffrey H. Moore, and R. J. Saulnier. In my absence, Mr. Moore also undertook the heavy task of guiding the manuscript through the press. I had the benefit also of useful comments from several Directors of the National Bureau, especially Percival F. Brundage, Gottfried Haberler, and Oswald Knauth. Their suggestions made possible a substantial improvement of the substance of the book. The writer—and the reader—both owe a debt to Martha Anderson. The form of the argument was bettered and its length reduced by her persistent and ingenious editing. My wife, Carrie Glasser Abramovitz, had an intimate part in it all. She worked through most of the argument with me and is responsible for much of the preparation of the final draft. My hearty thanks go to all these helpful friends.

MOSES ABRAMOVITZ

Palo Alto, California
July, 1950

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Inventories and Business Cycles

WITH SPECIAL REFERENCE TO
MANUFACTURERS' INVENTORIES

Long neglected in speculation about the causes of business cycles, inventory fluctuations must now be accepted as a factor of primary importance. This volume is the report of a comprehensive investigation in which a thorough study of inventory statistics is used to increase our understanding of the forces controlling the state of business. As the author states in his Preface: "As nearly as I could, I have tried to discover, by studying statistical records, how inventories have moved during business cycles and what influence they have had on business activity. And so far as possible, the theories about inventory movements and their influence to which the work leads are generalizations of recorded experience."

The book is divided into three parts. The first reviews the literature of the subject and describes the statistical materials and methods to be employed. Part Two is a study of cycles in the volume of inventories held by business. It finds that inventories respond only very slowly to changes in business activity and traces the long lag to the commercial and technical obstacles that pre-

vent business firms from quickly adjusting certain classes of inventory holdings to changes in requirements. Part Three investigates the connection between the pace of inventory accumulation and liquidation and the state of business. It finds that inventory accumulation and business activity tend to reach peak (and trough) levels at about the same time and that a large fraction of the changes in total output during American business cycles has taken the form of changes in the volume of output devoted to building up stocks. Successive chapters study the causes of the timing and magnitude of the fluctuations in inventory accumulation and their significance for the size, duration, and intensity of business cycles.

This study is the fourth volume in the series of Studies in Business Cycles in which the National Bureau of Economic Research is making known the results of its systematic exploration of the causes of prosperity and depression.

The Author

Moses Abramovitz has been an instructor and lecturer in economics at Harvard and Columbia Universities. His book on *Price Theory for a Changing Economy* won the 1939 Seligman Prize. He has been a member of the staff of the National Bureau of Economic Research since 1938 and is now Professor of Economics at Stanford University.

Part One

Theories, Materials,
and Methods of Measurement