

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Indicators of Business Expansions and Contractions

Volume Author/Editor: Moore, Geoffrey H. and Julius Shiskin

Volume Publisher: UMI

Volume ISBN: 0-87014-444-8

Volume URL: <http://www.nber.org/books/moor67-2>

Publication Date: 1967

Chapter Title: Front matter, INDICATORS OF BUSINESS EXPANSIONS AND CONTRACTS

Chapter Author: Geoffrey H. Moore, Julius Shiskin

Chapter URL: <http://www.nber.org/chapters/c1266>

Chapter pages in book: (p. -16 - 0)

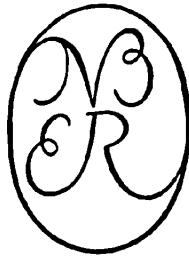
GEOFFREY H. MOORE

NATIONAL BUREAU OF ECONOMIC RESEARCH

JULIUS SHISKIN

BUREAU OF THE CENSUS

INDICATORS OF BUSINESS
EXPANSIONS AND CONTRACTIONS



NATIONAL BUREAU OF ECONOMIC RESEARCH

NEW YORK 1967

Distributed by

COLUMBIA UNIVERSITY PRESS

NEW YORK AND LONDON

Copyright © 1967 by
National Bureau of Economic Research, Inc.
261 Madison Avenue, New York, N.Y., 10016
All Rights Reserved

Library of Congress Catalog Card Number 66-30650
Printed in the United States of America

OCCASIONAL PAPER 103

**INDICATORS
OF BUSINESS EXPANSIONS
AND CONTRACTIONS**

2,005,952

National Bureau of Economic Research, Inc.

Moore, Geoffrey Hoyt.

Indicators of business expansions and contractions (by Geoffrey H. Moore (and) Julius Shiskin. New York, National Bureau of Economic Research; distributed by Columbia University Press, 1967.

xiii, 127 p. illus. 26 cm. (National Bureau of Economic Research. Occasional paper 103)

1. Economic indicators. 2. Business cycles. I. Shiskin, Julius, joint author. II. Title. (Series)

H11.N2432 no. 103

838.54

66-30650

MATERIAL SUBMITTED BY PUBLISHER.

The choice before man is not whether to engage in forecasting or to abstain from it, but whether to base expectations on 'hunches' or on lessons carefully distilled from experience.

ARTHUR F. BURNS

The Frontiers of Economic Knowledge

**RELATION OF THE DIRECTORS TO THE WORK AND PUBLICATIONS
OF THE NATIONAL BUREAU OF ECONOMIC RESEARCH**

1. The object of the National Bureau of Economic Research is to ascertain and to present to the public important economic facts and their interpretation in a scientific and impartial manner. The Board of Directors is charged with the responsibility of ensuring that the work of the National Bureau is carried on in strict conformity with this object.

2. To this end the Board of Directors shall appoint one or more Directors of Research.

3. The Director or Directors of Research shall submit to the members of the Board, or to its Executive Committee, for their formal adoption, all specific proposals concerning researches to be instituted.

4. No report shall be published until the Director or Directors of Research shall have submitted to the Board a summary drawing attention to the character of the data and their utilization in the report, the nature and treatment of the problems involved, the main conclusions, and such other information as in their opinion would serve to determine the suitability of the report for publication in accordance with the principles of the National Bureau.

5. A copy of any manuscript proposed for publication shall also be submitted to each member of the Board. For each manuscript to be so submitted a special committee shall be appointed by the President, or at his designation by the Executive Director, consisting of three Directors selected as nearly as may be one from each general division of the Board. The names of the special manuscript committee shall be stated to each Director when the summary and report described in paragraph (4) are sent to him. It shall be the duty of each member of the committee to read the manuscript. If each member of the special committee signifies his approval within thirty days, the manuscript may be published. If each member of the special committee has not signified his approval within thirty days of the transmittal of the report and manuscript, the Director of Research shall then notify each member of the Board, requesting approval or disapproval of publication, and thirty additional days shall be granted for this purpose. The manuscript shall then not be published unless at least a majority of the entire Board and a two-thirds majority of those members of the Board who shall have voted on the proposal within the time fixed for the receipt of votes on the publication proposed shall have approved.

6. No manuscript may be published, though approved by each member of the special committee, until forty-five days have elapsed from the transmittal of the summary and report. The interval is allowed for the receipt of any memorandum of dissent or reservation, together with a brief statement of his reasons, that any member may wish to express; and such memorandum of dissent or reservation shall be published with the manuscript if he so desires. Publication does not, however, imply that each member of the Board has read the manuscript, or that either members of the Board in general, or of the special committee, have passed upon its validity in every detail.

7. A copy of this resolution shall, unless otherwise determined by the Board, be printed in each copy of every National Bureau book.

(Resolution adopted October 25, 1926, as revised February 6, 1933, and February 24, 1941)

National Bureau of Economic Research

1967

OFFICERS

Frank W. Fetter, *Chairman*
Arthur F. Burns, *President*
Theodore O. Yntema, *Vice-President*
Donald B. Woodward, *Treasurer*

Geoffrey H. Moore, *Director of Research*
Douglas H. Eldridge, *Executive Director*
Hal B. Lary, *Associate Director of Research*
Victor R. Fuchs, *Associate Director of Research*

DIRECTORS AT LARGE

Joseph A. Beirne, *Communications Workers of America*
Wallace J. Campbell, *Foundation for Cooperative Housing*
Erwin D. Canham, *Christian Science Monitor*
Solomon Fabricant, *New York University*
Marion B. Folsom, *Eastman Kodak Company*
Crawford H. Greenewalt, *E. I. du Pont de Nemours & Company*
Gabriel Hauge, *Manufacturers Hanover Trust Company*
Walter W. Heller, *University of Minnesota*
Albert J. Hettinger, Jr., *Lazard Frères and Company*
Harry W. Laidler, *League for Industrial Democracy*
Geoffrey H. Moore, *National Bureau of Economic Research*

Charles G. Mortimer, *General Foods Corporation*
J. Wilson Newman, *Dun & Bradstreet, Inc.*
George B. Roberts, *Larchmont, New York*
Robert V. Roosa, *Brown Brothers Harriman & Co.*
Harry Scherman, *Book-of-the-Month Club*
Boris Shishkin, *American Federation of Labor and Congress of Industrial Organizations*
George Soule, *South Kent, Connecticut*
Gus Tyler, *International Ladies' Garment Workers' Union*
Joseph H. Willits, *Langhorne, Pennsylvania*
Donald B. Woodward, *A. W. Jones and Company*

DIRECTORS BY UNIVERSITY APPOINTMENT

V. W. Bladen, *Toronto*
Francis M. Boddy, *Minnesota*
Arthur F. Burns, *Columbia*
Lester V. Chandler, *Princeton*
Melvin G. de Chazeau, *Cornell*
Frank W. Fetter, *Northwestern*
R. A. Gordon, *California*

Harold M. Groves, *Wisconsin*
Gottfried Haberler, *Harvard*
Maurice W. Lee, *North Carolina*
Lloyd G. Reynolds, *Yale*
Paul A. Samuelson, *Massachusetts Institute of Technology*
Theodore W. Schultz, *Chicago*

Willis J. Winn, *Pennsylvania*

DIRECTORS BY APPOINTMENT OF OTHER ORGANIZATIONS

Percival F. Brundage, *American Institute of Certified Public Accountants*
Nathaniel Goldfinger, *American Federation of Labor and Congress of Industrial Organizations*
Harold G. Halcrow, *American Farm Economic Association*
Walter E. Hoadley, *American Finance Association*

Murray Shields, *American Management Association*
Willard L. Thorp, *American Economic Association*
W. Allen Wallis, *American Statistical Association*
Harold F. Williamson, *Economic History Association*
Theodore O. Yntema, *Committee for Economic Development*

DIRECTORS EMERITI

Shepard Morgan, *Norfolk, Connecticut*

Jacob Viner, *Princeton, New Jersey*

RESEARCH STAFF

Moses Abramovitz
Gary S. Becker
Gerhard Bry
Arthur F. Burns
Phillip Cagan
Frank G. Dickinson
James S. Earley
Richard A. Easterlin
Solomon Fabricant

Milton Friedman
Victor R. Fuchs
H. G. Georgiadis
Raymond W. Goldsmith
Jack M. Guttentag
Challis A. Hall, Jr.
Daniel M. Holland
F. Thomas Juster
C. Harry Kahn

John W. Kendrick
Irving B. Kravis
Hal B. Lary
Robert E. Lipsey
Ruth P. Mack
Jacob Mincer
Ilse Mintz
Geoffrey H. Moore
Roger F. Murray

Ralph L. Nelson
G. Warren Nutter
Richard T. Selden
Lawrence H. Seltzer
Robert P. Shay
George J. Stigler
Norman B. Ture
Victor Zarnowitz

Contents

	<i>Page</i>
ACKNOWLEDGMENTS	xiii
I. INTRODUCTION AND SUMMARY	1
Summary	3
II. AN EXPLICIT SCORING SYSTEM FOR BUSINESS CYCLE INDICATORS	8
1. Criteria Appropriate for Selecting Indicators	8
2. Economic Processes or Individual Indicators?	10
3. Economic Significance	12
4. Statistical Adequacy	16
5. Conformity	17
6. Timing	18
7. Currency and Smoothness	20
8. Coverage of Series Under Review	21
9. Application of the Scoring Plan Illustrated	22
10. Interpretation of Scores	28
III. PROBLEMS OF CLASSIFICATION AND PRESENTATION	29
1. Differences in Timing at Peaks and Troughs	29
2. Differences in Length of Lead or Lag	30
3. A Short List of Indicators	31
4. Classifications by Timing and by Economic Process	33
IV. THE 1966 LIST OF INDICATORS	34
1. General Framework	34
2. The Full List	34
3. The Short List	67
4. The Other Series Scored	67
5. The Role of Quantitative Standards	70
6. The Contribution of the New List	71
APPENDIX	
A. Instructions for Assigning Scores to Indicators	89
B. Eighty-eight Selected Indicators Classified by Timing and Economic Process: Timing Characteristics for Peaks and Troughs Separately	94
C. Thirty-four Other Series Classified by Economic Process: Timing Characteristics for Peaks and Troughs Separately	102
D. Conformity and Timing Scores for 1948-65	106
E. Median Lead (or Lag) of Seventy-two Selected Indicators Adjusted for Loss of Currency When Smoothed by MCD Moving Averages	109
F. Monthly Chronology of Business Cycles in the United States, 1854-1961	113
G. Titles and Sources of Series Reviewed in This Report	114
INDEX	120

Tables

	<i>Page</i>
1. Cross-Classification of 88 Business Cycle Indicators by Cyclical Timing and Economic Process	5
2. Classification of 122 Series According to Economic Process and Breadth of Coverage	13
3. Sample Scoresheet for Indicators	23
4. Sample Worksheet for Measures of Timing, Conformity, and Smoothness	25
5. Distribution of Scores for 120 Indicators	27
6. Eighty-eight Selected Indicators Classified by Timing and Economic Process: Scores and Timing Characteristics	36
7. Short List of Indicators: Scores and Timing Characteristics	68
8. Relation Between the 1966 and the 1960 Short Lists of Indicators	69
9. Thirty-four Other Series Classified by Economic Process: Scores and Timing Characteristics	72
10. Average Scores for Selected Groups of Indicators	81
11. Timing of 1960 List of Twenty-six Indicators Prior to and Subsequent to Their Selection	82
12. Summary Measures for Composite Indexes Based on NBER 1960 and 1966 Lists of Indicators, 1948-66	87

Charts

	<i>Page</i>
1. Eighty-eight Selected Indicators Classified by Timing and Economic Process	47
2. Thirty-four Other Series Classified by Economic Process	74
3. Composite Indexes Based on the 1960 and 1966 NBER Lists	84
4. Amplitude- Adjusted Composite Indexes for Economic Subgroups of Leading Indicators	88

Acknowledgments

An empirical investigation of this scope has to be the work of many persons. The authors owe much to the advisers who counseled them. Arthur F. Burns was virtually a collaborator in the enterprise, and his constructive ideas influenced every part of the project. The innovations in the treatment of indicators had to be tested against the critical minds of other investigators before they could be made public. This contribution was made by our colleagues, Victor Zarnowitz, Ilse Mintz, and Edgar Fiedler; by members of a committee appointed by the American Economic Association to advise the Census Bureau on *Business Cycle Developments*, especially Donald J. Daly, Gottfried Haberler, Bert G. Hickman, Frank E. Morris, Lawrence R. Klein, and Beryl W. Sprinkel; and by Leonard H. Lempert and Gordon W. McKinley. Numerous modifications of our plans and manuscript drafts were made upon their suggestions and criticisms.

During the three years over which this study was carried out, the technical skill and devotion of Sophie Sakowitz, Johanna Stern, Dorothy O'Brien, and Esther Reichner were unequalled. Their patience in redoing the work several times, after experience had indicated flaws in earlier plans, is a quality that, unfortunately, will remain undetected by the reader, though greatly appreciated by the authors. We are indebted, also, to James F. McRee, Jr., for editing the manuscript.

This monograph is part of a comprehensive study conducted by the National Bureau to evaluate and improve short-term forecasts of aggregate economic activity. The study was aided by grants to the National Bureau from Whirlpool Corporation, General Electric Company, Ford Motor Company Fund, U.S. Steel Corporation, and the Relm Foundation. A grant of electronic computer time to the National Bureau by the International Business Machines Corporation was used for some of the statistical analyses in this report.

Mr. Shiskin carried out his part of the research while on leave from the Bureau of the Census, and the Census Bureau is not to be held responsible for any of the statements made.

