

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

Volume Title: Business Cycle Indicators, Volume 1

Volume Author/Editor: Geoffrey H. Moore, ed.

Volume Publisher: Princeton University Press

Volume ISBN: 0-870-14093-0

Volume URL: <http://www.nber.org/books/moor61-1>

Publication Date: 1961

Chapter Title: Introductory pages to "Business Cycle Indicators, Volume 1"

Chapter Author: Geoffrey H. Moore

Chapter URL: <http://www.nber.org/chapters/c0719>

Chapter pages in book: (p. -35 - -15)

BUSINESS CYCLE INDICATORS

VOLUME I

**Contributions to the Analysis of
Current Business Conditions**

NATIONAL BUREAU OF ECONOMIC RESEARCH

Studies in Business Cycles

1. *Business Cycles: The Problem and Its Setting*, by Wesley C. Mitchell
2. *Measuring Business Cycles*, by Arthur F. Burns and Wesley C. Mitchell
3. *American Transportation in Prosperity and Depression*, by Thor Hultgren
4. *Inventories and Business Cycles, with Special Reference to Manufacturers' Inventories*, by Moses Abramovitz
5. *What Happens during Business Cycles: A Progress Report*, by Wesley C. Mitchell
6. *Personal Income during Business Cycles*, by Daniel Creamer with the assistance of Martin Bernstein
7. *Consumption and Business Fluctuations: A Case Study of the Shoe, Leather, Hide Sequence*, by Ruth P. Mack
8. *International Financial Transactions and Business Cycles*, by Oskar Morgenstern
9. *Federal Receipts and Expenditures During Business Cycles, 1879-1958*, by John M. Firestone
10. *Business Cycle Indicators: Volume I, Contributions to the Analysis of Current Business Conditions; Volume II, Basic Data on Cyclical Indicators*; edited by Geoffrey H. Moore

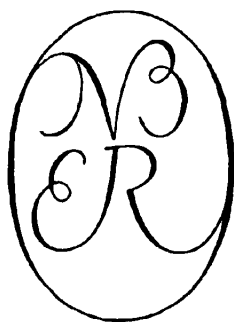
See page 736 for a complete list of National Bureau publications on business cycles, 1920-60.

Business Cycle Indicators

VOLUME I

Contributions to the Analysis of
Current Business Conditions

GEOFFREY H. MOORE, EDITOR



A STUDY BY THE
NATIONAL BUREAU OF ECONOMIC RESEARCH



PUBLISHED BY
PRINCETON UNIVERSITY PRESS, PRINCETON

1961

Copyright © 1961, by Princeton University Press
All Rights Reserved

L.C. Card No. 60-14062

Printed in the United States of America

NATIONAL BUREAU OF ECONOMIC RESEARCH

1960

OFFICERS

George B. Roberts, *Chairman*
Arthur F. Burns, *President*
Theodore W. Schultz, *Vice-President*
Murray Shields, *Treasurer*
Solomon Fabricant, *Director of Research*
Geoffrey H. Moore, *Associate Director of Research*
Hal B. Lary, *Associate Director of Research*
William J. Carson, *Executive Director*

DIRECTORS AT LARGE

Wallace J. Campbell, *Nationwide Insurance*
Solomon Fabricant, *New York University*
Crawford H. Greenewalt, *E. I. du Pont de Nemours & Company*
Gabriel Hauge, *Manufacturers Trust Company*
Albert J. Hettinger, Jr., *Lazard Frères and Company*
H. W. Laidler, *League for Industrial Democracy*
Shepard Morgan, *Norfolk, Connecticut*
George B. Roberts, *Larchmont, New York*
Harry Scherman, *Book-of-the-Month Club*
Boris Shishkin, *American Federation of Labor and Congress of Industrial Organizations*
George Soule, *Washington College*
J. Raymond Walsh, *New York City*
Joseph H. Willits, *The Educational Survey, University of Pennsylvania*
Leo Wolman, *Columbia University*
Donald B. Woodward, *Vick Chemical Company*
Theodore O. Yntema, *Ford Motor Company*

DIRECTORS BY UNIVERSITY APPOINTMENT

V. W. Bladen, *Toronto*
Arthur F. Burns, *Columbia*
Melvin G. de Chazeau, *Cornell*
Frank W. Fetter, *Northwestern*
Harold M. Groves, *Wisconsin*
Gottfried Haberler, *Harvard*
Walter W. Heller, *Minnesota*
Maurice W. Lee, *North Carolina*
Lloyd G. Reynolds, *Yale*
Theodore W. Schultz, *Chicago*
Jacob Viner, *Princeton*
Willis J. Winn, *Pennsylvania*

DIRECTORS APPOINTED BY OTHER ORGANIZATIONS

Percival F. Brundage, *American Institute of Certified Public Accountants*
Harold G. Halcrow, *American Farm Economic Association*
Theodore V. Houser, *Committee for Economic Development*
S. H. Ruttenberg, *American Federation of Labor and Congress of Industrial Organizations*
Murray Shields, *American Management Association*
Willard L. Thorp, *American Economic Association*
W. Allen Wallis, *American Statistical Association*
Harold F. Williamson, *Economic History Association*

DIRECTORS EMERITI

Oswald W. Knauth, *Beaufort, South Carolina*
N. I. Stone, *New York City*

RESEARCH STAFF

Moses Abramovitz
Gary S. Becker
Gerhard Bry
Arthur F. Burns
Phillip Cagan
Morris A. Copeland
Frank G. Dickinson
James S. Earley
Richard A. Easterlin
Solomon Fabricant
Milton Friedman
Raymond W. Goldsmith
Millard Hastay
Daniel M. Holland
Thor Hultgren
F. Thomas Juster
C. Harry Kahn
John W. Kendrick
Simon Kuznets
Hal B. Lary
Ruth P. Mack
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
Leo Wolman
Herbert B. Woolley

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
and revised February 6, 1933 and February 24, 1941)*

Acknowledgments

It is a pleasure to acknowledge my indebtedness to the authors of the pieces collected in this book, both for waiting so patiently while it was being assembled and for attending so carefully to details. I am grateful especially to Arthur F. Burns and Solomon Fabricant for their encouragement and help in planning the book and their critical review of my own contributions to it.

Many others have shared in the work. Alexander Pitts took charge of the preparation of the descriptions of series in Volume II and contributed to the revision and updating of the business cycle chronology in Appendix A. Sophie Sakowitz has had the responsibility for the cyclical analysis of the indicators, assisted chiefly by Dorothy O'Brien and Sandra-Lee Abu El-Haj. Johanna Stern collected the data and Charlotte Boschan supervised the preparation of the print-outs for Volume II. H. Irving Forman prepared all the charts in the book, both those previously published and the new ones. Marie-Christine Culbert carefully edited the entire manuscript, and Muriel De Mar cheerfully typed and retyped the copy. To all these individuals, my heartiest thanks!

It is clear that the preparation of this book was a cooperative endeavor. The persons named above, as well as those whose names appear in the Table of Contents and those whose assistance is specifically acknowledged at the head of most of the chapters, have all made it possible. Yet there is one man whom all the cooperators would deem to be the father of the enterprise—Wesley Mitchell. This book is the product of his foresight and initiative in starting and for many years conducting the National Bureau's studies in business cycles. His role can be gratefully acknowledged. It can never be evaluated.

G. H. M.

Contents

INTRODUCTION, BY GEOFFREY H. MOORE xxiii

PART ONE. SELECTION AND INTERPRETATION OF INDICATORS

1. Basic Research and the Analysis of Current Business Conditions, by Solomon Fabricant 3
2. New Facts on Business Cycles, by Arthur F. Burns 13
3. Leading and Confirming Indicators of General Business Changes, by Geoffrey H. Moore 45
4. The Predictive Value of the National Bureau's Leading Indicators, by Frank E. Morris 110
5. Measuring Recessions, by Geoffrey H. Moore 120
6. Statistical Indicators of Cyclical Revivals, by Wesley C. Mitchell and Arthur F. Burns 162
7. Statistical Indicators of Cyclical Revivals and Recessions, by Geoffrey H. Moore 184
8. The Diffusion of Business Cycles, by Geoffrey H. Moore 261
9. Diffusion Indexes, Rates of Change, and Forecasting, by Geoffrey H. Moore 282
10. Indicators of Cyclical Recessions and Revivals in Canada, by W. A. Beckett 294

PART TWO. CYCLICAL BEHAVIOR OF TYPES OF LEADING INDICATORS

11. Cyclical Diversities in the Fortunes of Industrial Corporations, by Thor Hultgren 325
12. Cyclical Changes in Business Failures and Corporate Profits, by Victor Zarnowitz and Lionel J. Lerner 350
13. Cyclical Aspects of Incorporations and the Formation of New Business Enterprises, by Victor Zarnowitz 386
14. The Timing of Manufacturers' Orders During Business Cycles, by Victor Zarnowitz 420
15. The Timing of Cyclical Changes in the Average Workweek, by Gerhard Bry 485
16. Business Cycles and the Labor Market, by Geoffrey H. Moore 505

PART THREE. AIDS TO THE CURRENT USE OF INDICATORS

17. Electronic Computers and Business Indicators, by Julius Shiskin 517
18. Statistics for Short-Term Economic Forecasting, by Julius Shiskin 598

CONTENTS

- 19. An Amplitude Adjustment for the Leading Indicators, by
Geoffrey H. Moore 645
- 20. A Technique for Summarizing the Current Behavior of
Groups of Indicators, by Geoffrey H. Moore 653

APPENDIXES

- A. A Chronology of Business Cycles in the United States and
Measures of Their Duration 669
 - B. Leads and Lags of Cyclical Indicators 672
 - C. Monthly Changes in Cyclical Indicators During Expansions
and Contractions 687
- National Bureau Publications on Business Cycles, 1920-60 736
- Index 745

Tables

2.1	Characteristic Direction and Amplitude of Twenty-six "Comprehensive" Series During a Business Cycle	28
3.1	Prewar and Postwar Timing of Twenty-one Indicators	52
3.2	Leads and Lags of Twenty-six Statistical Indicators (1960 List) at Business Cycle Peaks and Troughs	56
3.3	Diffusion Indexes and Directions of Change of Twenty-one Economic Indicators, 1956-58	74
3.4	Percentage Change in Twenty-one Indicators in the First Seven Months of Revival, Arrayed by Severity of Preceding Contraction	87
3.5	Prewar and Postwar Timing of Twenty-one Indicators, Peaks and Troughs Separately	102
3.6	Average Amplitude of Rise and Fall in Three Indexes of Business Activity During Twenty-five Business Cycles, 1854-1958	104
3.7	Convenient Sources of Current Data for Twenty-six Indicators (1960 List)	106
3.8	Measures of Erratic Movements and Smoothing Periods, Twenty-six Indicators (1960 List)	108
4.1	New Orders for Durable Goods	117
5.1	The Duration of Business Cycle Expansions and Contractions in the United States, 1854-1957	121
5.2	Measures of the Duration and Amplitude of Business Cycle Contractions in the United States, 1920-54	122
5.3	Percentage Changes in Industrial Production During Seven Business Cycle Contractions	128
5.4	Ranking of Percentage Changes in Selected Indicators of Aggregate Economic Activity During Seven Business Cycle Contractions	135
5.5	Rank Correlation Coefficients: Severity of Business Cycle Contractions and Percentage Changes in Selected Indicators	136
5.6	Ranking of Seven Business Cycle Contractions According to Severity in Successive Months after Peaks, Two Groups of Indicators	137
5.7	Ranking of Percentage Changes in Ten Leading Indicators During Seven Business Cycle Contractions	139
5.8	Measures of the Changing Scope of Business Cycle Contractions	141

TABLES

5.9	Durations of Business Contractions and Periods of Depressed Activity	144
5.10	Percentage Changes During First Seven Months of Eight Business Cycle Contractions, Two Groups of Indicators	148
5.11	Summary Comparison of 1957-58 Contraction with Earlier Business Cycle Contractions, for Successive Months after Peaks, Two Groups of Indicators	151
5.12	Ranking of 1957-58 Contraction in Relation to Seven Earlier Business Cycle Contractions, for Successive Months after Peaks, Two Groups of Indicators	152
5.13	Measures of the Changing Scope of Business Cycle Contractions (Revised Table 5.8)	157
5.14	Measures of the Amplitude of the 1957-58 Business Cycle Contraction	159
5.15	Unemployment Rate at Business Cycle Peaks and Troughs, 1900-58	161
6.1	Timing of Seventy-one Series at Business Cycle Revivals in the United States, Their Erratic Movements and Their Cyclical Amplitudes	168
7.1	Cyclical Timing of Twenty-one Statistical Indicators	190
7.2	Conformity Measures, Seven Series	208
7.3	Timing Measures, Five Series	210
7.4	Classification of All Series Examined for Acceptability as Indicators	214
7.5	Percentage of Series with Acceptable Conformity and Timing, by Economic Groups	216
7.6	Percentage of Series with Acceptable Conformity and Timing, Prices, Production, Employment, and Payrolls	218
7.7	Distribution of Acceptable Series by Timing Classifications Based on Full Period Covered and on 1919-38	219
7.8	Timing Observations Before and After 1919, Two Groups of Series	223
7.9	Timing of Percentage of Series Expanding and Contracting in Successive Business Cycles, 1879-1938: Two Groups of Series	226
7.10	Timing of Medians of Corresponding Specific Cycle Turns, 1885-1938: Three Groups of Series	235
7.11	Record of Timing of Selected Statistical Indicators at Business Cycle Turns	244
7.12	Chronology of Postwar Peaks in Selected Statistical Indicators	256

TABLES

8.1	Five Sets of Observations on Diffusion of Movements in Economic Data During Successive Stages of Business Cycles	265
8.2	Timing of Diffusion Indexes at Business Cycle Peaks and Troughs, 1919-38, 1948-53	272
8.3	Diffusion Indexes Based on Specific Cycles, in Mild and Severe Contractions	276
8.4	Diffusion Indexes Based on Short-Period Directions of Change, in Mild and Severe Contractions	280
9.1	Timing of Production Diffusion Indexes at Business Cycle Peaks and Troughs, 1920-38, 1948-54	288
10.1	End Product Demand Patterns, Canada and United States, 1953-55	296
10.2	Postwar Business Cycle Turning Points, Canada and United States	299
10.3	Twenty-one Indicators of Revivals and Recessions, Canada and United States	300
10.4	Lead or Lag of Twenty-one Indicators of Cyclical Revivals and Recessions, and Five Diffusion Indexes, Canada and United States	302
10.5	Average Monthly Amplitudes of Seasonal, Cyclical, and Irregular Components of Selected Indicators, Canada and United States	310
11.1	Characteristics of Samples of Quarterly Profits; Assets of Sample and Other Companies	327
11.2	Turning Points in Profits	336
11.3	Aggregate Profits: Change per Quarter in Earlier and in Later Quarters of Each Business Phase	338
11.4	Date of Most Common Turning Point in Profits of Producers of Durables and of Nondurables	339
11.5	Frequency of Turning Points in Profits in Early, Median, and Late Quarters: Producers of Durables and of Nondurables	340
11.6	Peaks and Troughs in Number of Companies with Profits Higher Than in Preceding Quarter and in Number with Expanding or Peak Profits, 1921-38: Producers of Durables and of Nondurables	341
11.7	Hypothetical Forecasts of Business Turns	343
12.1	Evidence on Timing Relations Between Large and Small Failures, 1878-1938	353

TABLES

12.2	Eight Series on Liabilities and Number of Business Failures, Timing at Business Cycle Turns, 1879-1938	356
12.3	Timing of Aggregates, Margins, and Diffusion Indexes of Profits, and of Some Related Series at Turns of Cycles in Liabilities of Business Failures, 1949-58	381
12.4	Percentages of Corporations with Positive and with Rising Profits, and Aggregate Corporate Profits, Timing at Turns in Two Series on Failure Liabilities, 1921-37	382
13.1	Timing of Total Incorporations at Business Cycle Turns, 1860-1938	391
13.2	New Corporate Security Issues and New Business Incorporations: Timing Comparisons, 1919-57	399
13.3	Timing of Incorporations and Business Births Relative to Investment in Plant and Equipment, 1946-58	401
14.1	Timing of New Orders at Business Cycle Turns, Thirty Individual Industries or Products	434
14.2	Timing of New Orders for Individual Industries or Products at Fifteen Business Cycle Turns, 1919-38, 1948-54	437
14.3	Timing of Thirty Series on New Orders at Business Cycle Turns, Distribution of Leads and Lags by Type of Turn and Type of Manufacture	438
14.4	Timing of New Orders and Shipments at Business Cycle Turns, Eighteen Individual Industries or Products	439
14.5	Timing of Comprehensive Series on New Orders at Business Cycle Turns, 1921-58	444
14.6	Value of Manufacturers' New Orders by Major Industries, Timing at Each Business Turn, 1948-58	446
14.7	Standard and Poor's and McGraw-Hill Indexes of Value of Manufacturers' New Orders, Timing at Each Business Cycle Turn, 1949-58	449
14.8	Timing of Selected Series on Unfilled Orders at Peaks and Troughs of Business Cycles	452
14.9	Timing of Manufacturers' Unfilled Orders at Successive Business Cycle Turns, Selected Measures, 1948-58	460
14.10	Four Series on Diffusion and Volume of New Orders of Durable Goods Manufacturers, Timing at Each Business Cycle Turn, 1920-38	464
14.11	Timing of Cumulated Diffusion Indexes and Aggregates, New Orders and Production, All Manufacturing Industries, 1948-58	472

TABLES

14.12	Value of New Orders Received and Expenditures on Plant and Equipment Made by Seven Major Manufacturing Industries: Summary of Comparisons at Turning Points, 1948-58	480
15.1	Average Workweek and Employment in Manufacturing and Nonmanufacturing Industries, Number of Leads and Lags at Each Reference Turn, 1921-56	494
15.2	Average Workweek and Employment in Manufacturing and Nonmanufacturing Industries, Timing at Each Reference Turn, 1921-56	496
15.3	Sequence of Cyclical Turning Points in Manufacturing Labor Input and Related Variables, at Two Business Cycle Turning Points (July 1953 and August 1954)	499
17.1	Average Month-to-Month Percentage Changes (Without Regard to Sign), Seasonally Adjusted Series, and Same-Month-Year-Ago Series, 1936-39 and 1953-56	528
17.2	Average Monthly Amplitudes of the Irregular, Cyclical, and Seasonal Components and Their Relations, Eighteen Monthly Economic Indicators, 1947-56	536
17.3	Irregular-Cyclical Ratios for Different Monthly Spans, Number of Months Required for Cyclical Dominance, and Average Leads and Lags, Eighteen Monthly Economic Indicators, 1947-56	538
17.4	Average Durations of Run for Seasonally Adjusted Series, Irregular and Cyclical Components, and Short-Term Moving Averages, Eighteen Monthly Economic Indicators, 1947-56	542
17.5	Average Durations of Run and Related Measures for Five Illustrative Series, 1947-56	545
18.1	Average Amplitudes of Irregular and Cyclical Components for Different Monthly Spans, Five Economic Series, 1947-56	606
18.2	Months Required for Cyclical Factor to Dominate Irregular Factor in 149 Important Economic Series, 1919-39 and 1947-56	607
18.3	Comparison of Month-to-Month Percentage Changes from Advance, Preliminary, and Final Reports, New Orders for Durable Manufactures, March 1958-August 1959	611
18.4	Comparison of Diffusion Indexes Computed from Advance, Preliminary, and Final Reports, New Orders for Durable Manufactures, Total, December 1958-August 1959	612

TABLES

18.5	Comparison of Original and Revised Diffusion Indexes	613
18.6	Comparison of Five Recent Recession Periods: Standardized Percentage Changes and Rankings from Reference Peak Levels and Reference Peak Dates	622
18.7	Comparison of Eight Recent Expansion Periods from Reference Peak Levels and Reference Trough Dates	624
18.8	Measures of Smoothness: Diffusion Indexes	627
18.9	Direction of Change in Component Series over Three-Month Spans, and Percentage of Series Rising, 1957-59, Nonagricultural Employment	628
19.1	Cyclical Timing and Amplitude of Index of Leading Indicators and Index of Industrial Production, 1948-58	648
19.2	Amplitude-Adjustment Method Applied to December 1958 Data	651
19.3	Amplitude-Adjusted Index of Leading Series, 1947-58	652
20.1	Measures of Timing and Smoothness of Fifteen Statistical Indicators	655
20.2	Distribution of Fifteen Indicators by Duration of Run in Moving Averages	657
20.3	Duration of Run in Moving Averages, Seven Leading and Eight Roughly Coincident Indicators	661
20.4	Timing of Cumulated Percentage Expanding and Cumulated Average Duration of Run, Two Groups of Indicators, 1920-38	664

Appendix Tables

A.1	Dates of Peaks and Troughs of Business Cycles in the United States, 1834-1958	670
A.2	Duration of Business Cycle Expansions and Contractions in the United States, 1854-1958	671
B.1	Leads and Lags of Twenty-six Current Indicators (1960 List) and Related Historical Indicators at Business Cycle Peaks and Troughs since 1870	673
B.2	Leads and Lags of Selected Additional Indicators at Business Cycle Peaks and Troughs since 1870	681
C.1	Recession and Recovery Patterns of Selected Indicators	689

Charts

2.1	Distribution of Turning Points of Specific Cycles in a Sample of over 600 Economic Time Series, 1919–39	15
2.2	Percentage of Series Undergoing Cyclical Expansion and Their Cumulative, 1919–39, Based on Sample of over 600 Economic Time Series	16
2.3	Simple Aggregate of Specific Cycles in over 600 Economic Time Series, Industrial Production, Factory Employment, and Freight Carloadings, 1919–39	19
2.4	Percentage of Series Undergoing Cyclical Expansion, Three Groups of Series, 1919–39	20
2.5	Percentage of Series Undergoing Cyclical Expansion, Moore's Sample of Well-Conforming Series, 1885–1939	21
2.6	Simple Aggregates of Specific Cycles in Three Groups of Series, 1919–39	26
2.7	Corporate Profits and Related Movements, 1920–38	31
2.8	Simple Aggregates of Specific Cycles in Two Groups of Series, Differentiated by Their Cyclical Timing, 1919–39	35
3.1	Leads and Lags at Business Cycle Peaks and Troughs, Twenty-one Indicators	50
3.2	Twenty-six Statistical Indicators (1960 List), 1948–60	58
3.3	Leading Indicators, Adjusted for Cyclical Amplitude and Smoothed, 1948–58	70
3.4	Diffusion Indexes of Business Indicators, 1948–59	73
3.5	Diffusion Indexes of Business Indicators During Recession and Revival, 1953–54, 1957–58	78
3.6	Diffusion Indexes for Selected Economic Activities, 1948–59	80
3.7	Four Types of Diffusion Index, 1919–39, 1948–58	81
3.8	Months Required to Regain Previous Peak Level of Industrial Production after Business Cycle Contractions of Different Severity	89
3.9	Rates of Increase in Industrial Production Following Business Cycle Contractions of Different Severity	90
3.10	Duration and Magnitude of Business Expansions and Contractions in the United States, 1854–1958	91
3.11	Business Recovery Patterns	94
4.1	Leading, Coinciding, and Lagging Series, Average Duration of Run, 1947–57	112
4.2	Federal Reserve Production Index and Average Duration of Run of Leading Series, 1947–57	114

CHARTS

4.3	Leading Series, 1954-57	118
5.1	Relative Changes after Business Cycle Peaks, Selected Series	130
5.2	Comparative Changes During the First Eight Months of Business Cycle Contractions, Selected Indicators	150
5.3	Measures of the Scope of Business Cycle Contractions	154
5.4	Severity of 1957-58 Contraction Compared with Earlier Business Contractions	160
7.1	Behavior of Twenty-one Statistical Indicators, 1932-39	188
7.2	Reference Cycle Pattern of Seven Series, 1919-38	192
7.3	Percentage of Series Reaching Specific Cycle Peaks and Troughs and Percentage Expanding, All Series with "Acceptable" Conformity	198
7.4	Number of Series Reaching Specific Cycle Peaks and Troughs, Three Groups of Series	230
7.5	Percentage of Series Expanding, Three Groups of Series	238
7.6	Behavior of Selected Statistical Indicators, 1936-58	246
8.1	Diffusion Indexes Based on Specific Cycles, 1919-38	268
8.2	Diffusion Indexes Based on Short-Period Directions of Change, 1919-38, 1947-54	270
9.1	Diffusion Indexes and Economic Aggregates, Production and Orders	286
9.2	"Historical" and "Current" Diffusion Indexes	290
10.1	Gross National Product, Industrial Production, and Unemployment, United States and Canada, 1952-55	298
10.2	Seven Leading Series, Canada, 1947-57	304
10.3	Eight Roughly Coincident Series, Canada, 1947-57	305
10.4	Five Lagging Series, Canada, 1947-57	306
10.5	Simple Diffusion Indexes, Canada, 1947-55	307
10.6	Cumulated Diffusion Indexes, Canada, 1947-55	308
11.1	Percentage Ratio, Number of Companies with Profits Higher Than in Preceding Quarter to Number in Sample	328
11.2	Profits of Philipps Petroleum Company	330
11.3	Percentage Ratio, Number of Companies with Profits in Expansion or at Peak to Number in Sample	330

CHARTS

11.4 Profits of Colonial Beacon Oil Company	332
11.5 Profits of American Safety Razor Corporation	332
11.6 Scattering of Turns in Profits	333
11.7 Profits of Frank G. Shattuck Company	335
11.8 Aggregate Profits of All Companies in Sample	335
11.9 Number of Companies (out of 244) with Profits Higher Than in Preceding Quarter, Two Methods of Seasonal Adjustment Compared	345
11.10 Percentage Ratio, Number of Companies with Profits Higher Than in Preceding Quarter to Number in Sample (computed by alternative method)	346
11.11 Profits of All Corporations, Seasonally Adjusted Annual Rates	348
11.12 Earnings of Large Industrial Corporations	348
12.1 Aggregate Liabilities, Numbers, and Average Liabilities of Business Failures, 1948-59	357
12.2 Average Reference Cycle Patterns of Selected Series on Business Failures	360
12.3 Liabilities of Business Failures Compared with Selected Profit Data, 1947-58	373
12.4 Liabilities of Business Failures Compared with Diffusion Indexes of Profits and Related Series, 1947-58	377
12.5 Liabilities of Business Failures, Aggregate Profits and Percentage of Companies with Rising Profits and with Positive Profits, 1920-38	378
12.6 Timing of Cycles in Large and Small Failures Compared with Cycles in Profit Diffusion and Aggregate Profits, 1920-38, 1948-58	384
13.1 Monthly Aggregate Index of Business Incorporations, 1860-1943	390
13.2 Number of New Firms and New Business Incorporations, 1945-58	394
13.3 Number of New and Discontinued Businesses and Net Change in Business Population, 1945-58	403
13.4 Incorporations and New and Transferred Corporate Businesses, 1945-54	406
13.5 Business Births and Transfers, Incorporations, and "Paper" Corporations, 1945-54	408
13.6 Number of New Business Firms, by Major Industrial Divisions, 1945-58	411

CHARTS

13.7	Percentage Distribution of New Business Firms by Legal Form of Organization and Size of Firm, 1954	412
13.8	Number of New Businesses (1945-58) and of Transferred Businesses (1951-58), by Size of Firm in Terms of Employment	413
13.9	Percentage Distributions of New Business Firms Within Types of Organization, by Size of Firm in Terms of Employment, 1954	414
14.1	Manufacturers' New and Unfilled Orders, Sales, and Ratio of Unfilled Orders to Sales, Durable Goods Industries, 1948-58	431
14.2	Manufacturers' New Orders, Three Estimates, 1920-58	442
14.3	Comparison of Department of Commerce and Standard and Poor's Estimates of Total Advance Orders for Durable and Nondurable Goods, 1949-58	450
14.4	Gross and Net New Orders for Machine Tools, 1945-58	454
14.5	Value of Manufacturers' Unfilled Orders for Durable and Nondurable Goods, 1935-58	456
14.6	Percentage Expanding and Average Duration of Run, Selected Series on New Orders of Individual Industries, 1919-38	462
14.7	Cumulated Diffusion Indexes and Aggregative Series, New Orders and Production of Durable Manufacturers, 1919-38	466
14.8	Diffusion Indexes of New Orders, Four Groups of Series, 1948-59	467
14.9	Cumulated Percentage Expanding and Aggregative Series, New Orders and Production, All Manufacturing Industries, 1948-58	471
14.10	New Investment Orders and Contracts, New Capital Appropriations, and Plant and Equipment Expenditures, 1948-59	474
14.11	Quarter-to-Quarter Percentage Change in Investment Orders and Contracts, Actual and Anticipated Plant and Equipment Expenditures, 1948-59	478
15.1	Average Workweek, Employment, and Man-Hours, All Manufacturing, 1920-57	486
15.2	Average Workweek, 1947-57	488
15.3	Labor Input and Related Variables, All Manufacturing, 1952-55	498
16.1	Monthly Labor Market Series, Manufacturing, 1947-54	506
16.2	Average Levels of Labor Market Series, Manufacturing, at Nine Stages of Five Business Cycles, 1919-38	510

CHARTS

17.1	The Raw Data and the Seasonal, Cyclical, and Irregular Components, Residential Building Contracts, 1948-56	520
17.2	The Raw Data and the Seasonal, Cyclical, and Irregular Components, Sales of a Major Chemical Company, 1948-56	521
17.3	Raw and Seasonally Adjusted Data for Two Smooth Economic Series, 1936-39	523
17.4	Statistical Adjustments of Raw Economic Series to Improve Their Usefulness as Economic Indicators, 1936-39 and 1953-56	524
17.5	The Effect of Trading-Day Adjustments, 1953-56	534
17.6	Short-Term Moving Averages of Eighteen Business Indicators, 1948-57	541
17.7	Different Forms of the Series on Residential Building Contracts, 1936-39 and 1953-56	547
17.8	Different Forms of the Series for the Sales of a Major Chemical Company, 1948-56	548
18.1	Three Seasonally Adjusted Weekly Series, 1956-59	603
18.2	Six Business Indicators and Their <i>MCD</i> Moving Averages, 1948-59	608
18.3	Average Diffusion Indexes, Leaders, Roughly Coincident Groups, All Groups, and Twenty-one NBER Economic Indicators, 1948-59	626
18.4	Average Diffusion Indexes and Average Modified Rates of Change, Leading, Roughly Coincident, and All Groups, 1948-58	630
18.5	Amplitude-Adjusted Indexes of Leading, Coincident, and Lagging Series, 1948-59	631
18.6	Leading, Coincident, and Lagging Series, 1924, 1949, 1954, and 1959 Expansions	632
19.1	Indexes of Leading Series and Industrial Production, 1948-58	647
20.1	Percentage Expanding, All Series with "Acceptable" Conformity; Average Duration of Run, Fifteen Series	658
20.2	Cumulated Percentage Expanding, All Series with "Acceptable" Conformity; Cumulated Average Duration of Run, Fifteen Series; FRB Index of Industrial Production	659
20.3	Average Duration of Run, Seven Leading and Eight Roughly Coincident Series	662
20.4	Cumulated Average Duration of Run, Seven Leading and Eight Roughly Coincident Series	663