

Dhananjayrao Gadgil Library



GIPE-PUNE-010294

289

0294

**PUBLICATIONS OF THE
NATIONAL BUREAU OF ECONOMIC RESEARCH,
INC.**

NUMBER 24

**STRATEGIC FACTORS
IN BUSINESS CYCLES**

**Gokhale Institute of
and Economic**

The National Bureau of Economic Research was organized in 1920 in response to a growing demand for scientific determination and impartial interpretation of facts bearing upon economic and social problems. Freedom from bias sought by the constitution of its Board of Directors without whose approval no report may be published. Rigid provisions guard the National Bureau from becoming a source of profit to its members, directors or officers, or from becoming an agency for propaganda.

Officers

H. W. LAIDLER, *Ch. of the Board* JOSEPH H. WILLITS, *Vice-President*
OSWALD W. KNAUTH, *President* GEORGE E. ROBERTS, *Treasurer*
CHARLES A. BLISS, *Executive Secretary*

Research Staff

WESLEY C. MITCHELL, *Director of Research*
ARTHUR F. BURNS FREDERICK R. MACAULAY
SIMON KUZNETS FREDERICK C. MILLS
LEO WOLMAN
EUGEN ALTSCHUL, *Associate*

Directors at Large

OSWALD W. KNAUTH GEORGE O. MAY
H. W. LAIDLER ELWOOD MEAD
SHEPARD MORGAN GEORGE SOULE
L. C. MARSHALL N. I. STONE
MATTHEW WOLL

Directors by University Appointment

EDWIN F. GAY, *Harvard* HARRY ALVIN MILLIS, *Chicago*
WALTON H. HAMILTON, *Yale* WESLEY C. MITCHELL, *Columbia*
HARRY JEROME, *Wisconsin* JOSEPH H. WILLITS, *Pennsylvania*

Directors appointed by other Organizations

HUGH FRAYNE GEORGE E. ROBERTS
American Federation of Labor *American Bankers Association*
DAVID FRIDAY M. C. RORTY
American Economic Association *American Statistical Association*
LEE GALLOWAY ARCH W. SHAW
American Management Association *National Publishers Association*
ROBERT B. WOLF
American Engineering Council

STRATEGIC FACTORS IN BUSINESS CYCLES

JOHN MAURICE CLARK

WITH AN INTRODUCTION BY
THE COMMITTEE ON RECENT
ECONOMIC CHANGES

A PUBLICATION OF THE
NATIONAL BUREAU OF ECONOMIC RESEARCH
IN COOPERATION WITH THE
COMMITTEE ON RECENT ECONOMIC CHANGES

NEW YORK : 1934.

COPYRIGHT, 1934, BY NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.
51 MADISON AVENUE, NEW YORK, N. Y. ALL RIGHTS RESERVED

C1/2
X:74
G 1
10294

TYPOGRAPHY: ERNST REICHL
PRINTED AND BOUND IN THE UNITED STATES OF AMERICA
BY H. WOLFF, NEW YORK

*Wolfe
Institute*

INTRODUCTION

BY THE COMMITTEE ON RECENT ECONOMIC
CHANGES

IN 1921, in the midst of the early post-War depression, the President of the United States called a national Conference on Unemployment to deal with urgent emergency problems. Out of this Conference came a series of important investigations, each sponsored by committees set up by the Conference.

In 1927 a continuing committee of that Conference was brought together under the chairmanship of Herbert Hoover, then Secretary of Commerce, designated as "The Committee on Recent Economic Changes of the President's Conference on Unemployment." Its purpose was to make a comprehensive fact-and-figure picture of the results of the working of economic forces during a major business cycle, assembled in the form of a descriptive record with statistical measurements, which should reveal the developing pattern of our economic evolution.

In order that this project might be carried out in a thoroughly scientific spirit, and be utterly free from partisan bias, the National Bureau of Economic Research, Inc. was enlisted by the Committee to assemble, assimilate and organize the factual and statistical material for study and interpretation. For

STRATEGIC FACTORS IN BUSINESS CYCLES

this undertaking a group of fifteen of the most competent economists in the country was assembled by the National Bureau of Economic Research. To the broad background knowledge of this collaborating group the National Bureau added its wealth of statistical data and its facilities for progressively measuring the operation of economic forces, reflecting the actions of millions of human beings engaged in the normal processes of living.

In 1928 Arch W. Shaw succeeded Mr. Hoover as Chairman of the Committee on Recent Economic Changes, and early in 1929 the Committee's first report was brought out, a two-volume work covering the period from 1922 to 1928, entitled *Recent Economic Changes in the United States*, intended as a record, partly statistical and partly descriptive, of the ascending curve of the cycle which started after the depression of 1921 and carried through 1928.

When, a year later, the country entered upon the descending curve of the major cycle under observation, the part that public works might be expected to play in stabilizing our national economy was engaging the attention of thinking men. Inasmuch as this represented a field where a statistical picture could be made with reasonable promptness, and one which would fit into its broad program, the Committee sponsored a study, which was prepared at the National Bureau of Economic Research under the

INTRODUCTION

direction of Dr. Leo Wolman, and published as *Planning and Control of Public Works*.

In 1932 the developing pattern of our economic experience was further disclosed by the publication of a work by Dr. Frederick C. Mills entitled, *Economic Tendencies in the United States*. This book, published cooperatively by the Committee on Recent Economic Changes and the National Bureau of Economic Research, summarized and extended the record covered by the two-volume report already described. In this work Dr. Mills essayed the important task of bringing out the characteristics of the tendencies prevailing during the period preceding the current economic depression, in comparison with the tendencies prevailing during the period preceding the World War. This served to clarify many economic relationships which had previously been little understood.

In this program the Committee and its collaborator, the National Bureau of Economic Research, have been concerned chiefly with making a quantitative analysis by means of facts and statistics, picturing as they do the movement of commerce and industry—ships crossing the seas with cargoes of imports and exports, freight and passenger trains rumbling across the continent, the daily transactions in banking houses, stock and produce exchanges, wholesale establishments and retail stores—all representing the reality of life and the relation of industry

STRATEGIC FACTORS IN BUSINESS CYCLES
to industry and individual to individual. Without such a statistical and descriptive record as had been undertaken, representing the 'measurables' of our economic life, little progress could be made in the analysis or understanding of the motives and operations that underlie and affect the movement of economic forces.

All statistical measurements must of necessity be on a common basis if comparison is to be possible. In the statistical record compiled over the whole period covered by the Committee's program, whatever monetary units have been used have been in terms of dollars based on a constant relationship to gold. Early in 1933 the United States went off the gold basis. The Committee recognized this as a natural stopping point for its undertaking, and it determined to bring to a head as rapidly as possible all of the separate studies which formed its program of publication, thus fulfilling its mission at a time when the results would be of the most timely interest and service.

In line with this decision, there will follow as rapidly as they can be completed and prepared for the press, a study of "Profits" by Dr. Ralph C. Epstein; a study of "Prices" by Dr. Frederick C. Mills; a report on "Wages and Consumption," by Dr. Leo Wolman; a report on "Industrial Trends" by Dr. Willard L. Thorp; and possibly one or more additional reports or surveys.

INTRODUCTION

Meanwhile, the Committee sponsored a special study, from the descriptive and statistical record which had been assembled, to endeavor to disclose, so far as might be possible, what factors play an active role in throwing the economic mechanism out of balance and what factors adapt themselves passively to the changes produced by the active factors. It is this phase of the Committee's exploration which explains the present volume. While the statistical and factual record of the cycle was being made by the collaborating group of economists, Dr. Clark was a regular attendant at the meetings of the group. He participated in the discussions, studied the wealth of factual and statistical material which had been assembled, and assimilated much of the picture of our economic life which it reflected. Then, viewing the whole picture objectively, he essayed to make an appraisal and draw certain conclusions.

The present volume is the result. Intended to achieve a perspective on the pattern of our recent economic experience, it shows something of the evolving design and, in careful fashion as becomes a work by so eminent a student of economic theory, examines into the general direction the pattern is taking.

While Dr. Clark is responsible for the conclusions herein set forth, the Committee on Recent Economic Changes is pleased to offer this report of his findings as a valuable and timely contribution to current economic thought. Indeed, the Committee hopes

STRATEGIC FACTORS IN BUSINESS CYCLES

that it may prove to be helpful in relating yesterday's economic experience to tomorrow's economic needs. For out of his intensive study of the pattern of our recent economic life Dr. Clark has endeavored to isolate what he terms the "strategic business factors"—strategic because they seem to have a causal influence upon the business cycle and are possibly susceptible of conscious control by the community. Highly suggestive, also, is his analysis of the character of and requirements for national economic balance, and the discussion of the means and possibilities of attaining and maintaining it.

The Committee is glad to have the opportunity of presenting an analysis of this character. It is also glad to add its emphasis to Dr. Clark's call for an improvement in the quality and quantity of the country's statistical services. But it realizes that effective results can be achieved only by putting to work the results of scientific analysis and continued statistical investigation in the realm of practical affairs. What is perhaps more needed at the present time than anything else is the development of means of coordinating and utilizing the experience of men of affairs and the results of economic research.

It is the Committee's belief that economic research itself is made more fruitful through contact between economists and men who are more familiar with business than with text books, for whatever scientific analysis has to contribute to human wel-

INTRODUCTION

fare must be done through the channel of practical application. Among the things which the Committee views with most satisfaction is that its work has made at least a modest contribution toward the achievement of some such union. In the carrying out of this work it has had the generous support of the Rockefeller Foundation, the Economic Club of Chicago, the Carnegie Corporation, and various socially-minded groups and individuals, whose support it here gratefully acknowledges.

Recognizing the timeliness of Dr. Clark's report, the Committee has been led to hasten its publication that it may serve the immediate need of clearer perspective. It is presented, not as a full and matured expression of the Committee's own collective viewpoint, but as the findings of an able thinker upon a broad problem of great significance at the present juncture in our social-political-economic life. It leads up to the great question that we face as a nation: which factors are and which are not amenable to purposive control by public or private agencies?

ARCH W. SHAW, *Chairman*
RENICK W. DUNLAP
WILLIAM GREEN
JULIUS KLEIN
JOHN S. LAWRENCE
MAX MASON
ADOLPH C. MILLER
LEWIS E. PIERSON

JOHN J. RASKOB
SAMUEL W. REYBURN
LOUIS J. TABER
DANIEL WILLARD
CLARENCE M. WOOLLEY
OWEN D. YOUNG
EDWARD E. HUNT,
Secretary

November, 1933

RELATION OF THE DIRECTORS
TO THE WORK 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 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 study shall be published until the Director or Directors of Research shall have submitted to the Board a summary report drawing attention to the character of the data and their utilization in the study, the nature and treatment of the problems involved, the main conclusions and such other information as in their opinion will serve to determine the suitability of the study for publication in accordance with the principles of the Bureau.

5. A copy of any manuscript proposed for publication shall also be submitted to each member of the Board. If publication is approved each member is entitled to have published also a memorandum of any dissent or reservation he may express, together with a brief statement of his reasons. The publication of a volume does not, however, imply that each member of the Board of Directors has read the manuscript and passed upon its validity in every detail.

6. The results of an inquiry shall not be published except with the approval of at least a majority of the entire Board and a two-thirds majority of all 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. The limit shall be forty-five days from the date of the submission of the synopsis and manuscript of the proposed publication unless the Board extends the limit; upon the request of any member the limit may be extended for not more than thirty days.

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

(Resolution of October 25, 1926, revised February 6, 1933)

CONTENTS

PART ONE

THEORETICAL APPROACH

The Nature of the Study	3
Framework of a Theory	13

PART TWO

TYPICAL CYCLE PATTERNS

Introduction	23
The Factor of Timing	
Introduction	26
Construction	27
Durable Luxury Goods	44
Consumers' Goods in General	47
Industrial Production and Prices, Employment and Payrolls	50
Stocks of Goods	53
Dealings in Securities	56
Agricultural Production and Prices	61
Foreign Trade	65
Banking	68
Corporate Incomes	69
General Conclusions as to Timing of Series	71
Amplitudes of Fluctuations:	
Production	73
Incomes	79
Prices	89
Profits	91

CONTENTS

PART THREE

GENERAL MOVEMENTS, 1922-1929

Introduction	96
The Stock Market	98
Construction	101
Banking	102
Fixed Capital	103
Corporate Net Incomes	106
Employment	108
Durable Goods	108
Conclusion	109

PART FOUR

SPECIAL FEATURES OF THE LAST CYCLE ✓

Summary	111
Non-Cyclical Factors: Post-War Conditions	116
Increase of Durable Goods	119
Conditions Bearing on Recovery	121

PART FIVE

ANOTHER APPROACH: THE MEANING AND REQUIREMENTS OF BALANCE

Introduction	124
The Meaning of 'Balance'	127
Labor and Employment	131
Steady Production: the Individualist Prescription	134
Savings and Capital Expenditures	136
A Stable Credit System vs. Cumulative Movements	138
Long-Run Problems of Distribution of Incomes	139

CONTENTS

New Goods	143
Hours of Labor	144
Balance between Savings and Economic Exploration	147
Over-Concentrations of Activity	151
Movements of Prices, Money Values and Profits	154
Other Points	156
Conclusion	158

PART SIX

✓ THE STRATEGIC FACTORS

Factors of Prediction vs. Factors of Diagnosis	160
Causes: A Partial Theory of Business Cycles	167
Factors of Controlling Importance	183
First Group: Originating Causes	184
Second Group: Business Responses Controlling the Short Cycle	187
Possibilities of Control as Guides to Strategic Importance	190
Third Group: Factors Responsible for Longer Trends	210
Next Steps—the Place of Research	219

APPENDIX

Aggregate Fluctuations of Producers' Goods, Residential Housing and Automobiles	227
--	-----

APPENDIX

AGGREGATE FLUCTUATIONS OF PRODUCERS' GOODS, RESIDENTIAL HOUSING AND AUTOMOBILES

THE aggregate movement of a group of such diverse series as here considered is not easy to estimate, in view of their differences of timing. The diversities of one series from cycle to cycle can be overcome by taking its average pattern through the successive stages of the cycle of general business. But this average pattern still differs in timing from one series to another. In meeting this difficulty, the fluctuations of these series will be presented in two ways; first, the fluctuations in the average general-cycle pattern of each series between the high and low points of its individual average movements; and second, an attempt will be made to estimate roughly the stages of the general business cycle which mark the high and low points of this group of series as an aggregate; and the fluctuation of each series between these points will be noted. These fluctuations will be stated as averages of the upward and downward movements, an

STRATEGIC FACTORS IN BUSINESS CYCLES

upward movement of 60 per cent and a downward movement of 40 per cent appearing as an average movement of 50 per cent. The percentage is in each case a percentage of the average value of the series for the cycle in question.

The average cyclical movements of the series representing the groups in question are shown below, with the stages ¹ of the general business cycle in which their high and low points occur and notes as to their general conformity. As already observed in the text, a pattern whose low point occurs in the eighth stage of the general cycle instead of the ninth is sufficiently typical of production series to be regarded as representing perfect conformity for series of this sort.

SERIES	STAGES OF GENERAL BUSINESS CYCLE		
	MARKING HIGH AND LOW POINTS OF AVER- AGE-CYCLE PATTERN OF SPECIFIC SERIES	AVERAGE MOVE- MENT (PER CENT)	CONFORMITY TO TIMING OF GENERAL BUSINESS CYCLE
Producers' goods, physical production (Leong's study), 1919-27, 3 cycles..	5, 8	27	Virtually perfect; one-stage lead on upturn.
Manufacture of basic materials (Harvard series adjusted), 1919-27, 3 cycles	5, 8	28	Virtually perfect.

¹See text, p. 9 for description of method of dividing the cycle into nine stages for purposes of comparing cycles of different length.

APPENDIX

<p>Passenger cars, physical production, 1914-27, 4 cycles 4, 6</p>	<p>43</p>	<p>Three - stage lead on up-turn, one-stage lead on down-turn, some irregularity.</p>
<p>Trucks, physical production, 1914-27, 4 reference cycles, 3 specific cycles... 5, 8</p>	<p>58</p>	<p>Virtually perfect.</p>
<p>Construction contracts awarded, total 1912-24, 4 cycles 4, 7</p>	<p>52</p>	<p>Two - stage lead on up-turn, one-stage lead on down-turn. This series might reasonably be lagged one stage, resulting in more perfect conformity.</p>

A selected list of producers' goods could be made up which would show far more than 27 per cent fluctuations, and might well account for the major part of the excess of this group above the average for all branches of production, at least in the 'industrial' class. Some of the items would be the following:

STRATEGIC FACTORS IN BUSINESS CYCLES

SERIES	STAGES MARKING HIGH AND LOW POINTS OF AVERAGE- CYCLE PATTERN OF SERIES	AVERAGE MOVE- MENT (PER CENT)	CONFORMITY TO TIMING OF GENERAL BUSINESS CYCLE
Pig iron, 1885-1927, 13 cycles	5, 8	40	Virtually per- fect.
Steel ingots, 1919-27, 3 cycles	5, 8	48	Extremely close.
Coke, 1912-27, 5 cycles..	5, 9	46	Perfect.
Machine-tool shipments (yearly basis), 1904-21, 5 reference cycles, 4 specific cycles	5, 9 (Stages 2, 4, 6 and 8 lacking)	52.5	Virtually per- fect. Monthly figures would show larger fluctuations.
Fabricated structural steel sales, 1915-24, 3 cycles...	3, 7	80	Two-stage lead.

All but the last of these series conform so closely in their average pattern to the general business cycle and to one another, that their aggregate fluctuations, taken as a group, would be very nearly as great as that of a properly weighted average of their individual fluctuations for the same succession of cycles. Thus the aggregate impact of these products on the economic system is extremely heavy. For purposes of comparison, the following series might be used.

APPENDIX

SERIES	STAGES MARKING HIGH AND LOW POINTS OF AVERAGE- CYCLE PATTERN	AVERAGE MOVE- MENT (PER CENT)	CONFORMITY TO TIMING OF GENERAL BUSINESS CYCLE
Physical production of consumers' goods excluding automobiles (Leong's study), 1919-27, 3 cycles..	4, 8	12	Lead, good conformity but some irregularities.
Industrial production, (Standard Statistics Company's index), 1912-27, 5 cycles	5, 9	24	Perfect.
Basic industries, (Federal Reserve Board index), 1919-27, 3 cycles	5, 8	23	Almost perfect.

It would be possible to determine the aggregate fluctuation of the group including producers' goods, construction and automobiles, by building up an inclusive series, properly weighted: but in this there would be one difficulty. What is the real meaning of the differences in timing between 'construction contracts awarded' and 'production of producers' goods'? Should the lead of the construction series be taken at its full face value? The one series records the completion of work, the other a preparatory stage in work which typically takes some months to complete. Thus it is reasonable to suppose that the timing of the actual work involved in construction might be better represented if the series were lagged, let us say, three months or even more.

STRATEGIC FACTORS IN BUSINESS CYCLES

In dealing with series already divided into 'stages', it has seemed legitimate to lag the series of construction contracts by one stage, always recognizing that this is a very rough and ready procedure.

If this is done, it seems fairly clear that the high and low points of the aggregate movement of the group will occur in the fifth and eighth periods. If the average movement of each series, then, be taken between these two periods, the result will be a series of percentages which, if properly averaged, would give a fairly true measure of the aggregate movement of the group. Since the behavior of the construction series is regarded as abnormal for the last two cycles, and two of the other series go no further back than 1919, completely comparable series are available for only two cycles: 1919-24. Most of the series are available, however, for three cycles: 1915-24. The following evidence may, then, be used.

SERIES	AVERAGE MOVEMENT, STAGES 8-5-8 (PER CENT)	REMARKS
Producers' goods, physical production (Leong's study), 1919-24, 2 cycles	32	
Manufacture of basic materials (Harvard series adjusted), 1919-24, 2 cycles	34	
Passenger cars, physical production, 1915-24, 3 cycles	18	Peak in stage 4; sharp drop to stage 5.
Trucks, physical production, 1915-24, 3 cycles	69	

APPENDIX

Construction contracts awarded 1915-24, 3 cycles (lagged one stage)	44
---	----

Further evidence afforded by these same series taken for a longer period where available, together with other particular series of the same character (involving some overlapping) is as follows:

SERIES	AVERAGE MOVEMENT, STAGES 8-5-8 (PER CENT)	REMARKS
Producers' goods, physical production (Leong's study), 1919-27, 3 cycles	27	
Manufacture of basic materials (Harvard series adjusted), 1919-27, 3 cycles	28	
Passenger cars, physical production, 1915-27, 4 cycles	19	
Trucks, physical production, 1915-27, 4 cycles	58	
Construction contracts awarded, 1912-27, 5 cycles ...	32	
Same series, lagged one stage	52	
Pig iron, 1885-1927, 13 cycles	40	
Steel ingots, 1919-27, 3 cycles	48	

STRATEGIC FACTORS IN BUSINESS CYCLES

Coke, 1912-27, 5 cycles	37	
Machine-tool shipments (yearly basis, 1904-21, 5 reference cycles, 4 specific cycles)	52.5	(Stage 8 lacking. Monthly figures would show larger fluctuations)
Fabricated structural steel, sales, 1915-24, 3 cycles	71.8	

One must allow for the fact that construction contracts are reported in money terms, thus exaggerating the actual physical movement, and for the further fact that the diffused effects of construction work are somewhat distributed in time. Taking these facts into consideration, it may very roughly be estimated that the aggregate fluctuation of this entire group in an average cycle could be not less than about 30 per cent.

INDEX

- Agriculture, 27, 61-5, 108, 112, 156-7
Amplitudes of cyclical movements, 25, 73-95
Anderson, M. D., 62n
Automobiles, 36-8, 44-6, 71, 73, 113-4, 229, 232-3
- Balance, 124-59
Banking system, 68-9, 96, 193
Banks, 112
Barter, 85, 123
Basic industries, 20, 26-7, 231
Baths, 27, 31, 32n, 50
Bonds (*see* Securities)
Building (*see* Construction)
Building permits, 27
- Call money rates, 60
Capacity, productive, 104-5, 155
Capital, 100, 103-5, 139-42, 147-54
Cement, 27, 31, 32n, 50, 53, 222
Clark, W. C., 120n
Clearings, 68
Coal, 50
Cobb, C. W., 105n
Coke, 26, 50, 230, 234
Confidence, 188, 191
Constant costs (*see* Costs)
Construction
 commercial, 28-9
 industrial, 28, 31, 32-3
 residential, 28-9, 32n, 33, 38-40, 71, 73, 98, 197-8
 total, 28-31, 41-2, 101-2, 112, 114
Construction materials, 27, 31-2
- Consumers' credit (*see* Credit)
Consumers' expenditures, 78, 81-9
Consumers' goods, 47-8, 71, 231
Contracts awarded, 27, 28, 29, 31, 229, 231-2, 233
Control, 5-7, 22, 190-210, 214-8
Cooperation necessary to stabilization, 195-7
Copeland, Morris, 75
Copper, 50, 53
Corporate financing of residential construction, 102
Corporate incomes, 69-71
Corporate surplus, 70-1, 80
Costs, 93-5, 129, 188
Cotton, 53, 54, 64
Credit
 banking, 68-9, 72, 88, 99, 112, 189, 192-3, 208-9
 consumers', 45-6, 82-3, 87-8, 119-20, 189
Currency, 200
- Debts, international, 215
Deflation, post-War, 16, 107, 213-4
Demand, 15, 37, 42, 43, 44-6, 90, 129-31, 134, 187, 191-2
Department store stocks, 53
Deposits, 68
Depression, 82-9, 111-23
Dividends, 70-1, 73, 80, 203
Douglas, Paul H., 105n
Durable goods, 17, 33, 37, 41, 71, 76, 83, 108-9, 113, 119-21, 211
Duration of cycles, 43-4, 179-83

INDEX

- Emergency Credit Corporation, 112
 Employment, 20, 51-2, 64, 108, 131-4
 Equilibrium (*see* Balance)
 Equipment, 42-3, 150-1, 223
 Exports of capital, 67, 117-9 (*see also* Loans)
 Exports of goods, 66-8, 111
 Factory employment (*see* Employment)
 Factory payrolls (*see* Payrolls)
Facts and Figures of the Automobile Industry, 1933, 36n, 37n
 Farming (*see* Agriculture)
 Federal Reserve Board, 51, 231 (*see also* Credit, Banking system)
 Financing of public works, 199
 Fixed capital, 103-5
 Flooring, oak, 27, 31, 50
 Flour milling, 64
 Forecasting, 160-7
 Foreign trade (*see* Trade, foreign)
 Free choice (*see* Voluntary choice)
 Frisch, Ragnar, 33n, 176n
 Fur coats, 44
 Gold and prices since the World War, 116-9
 Gold exchange standard, 16
 Hides, 64
 Hoarding, 82-3, 112
 Hours of labor, 52, 92, 144-7, 213, 215
 Imports, 65-6, 68, 118-9
 Incomes, personal, 53, 73, 80-9, 188-9, 199-202
 Individualism, 134-6
 Inductive method of study, 6, 22
 Installment sales (*see* Credit)
 Insurance, social, 153, 216-8
 Intensification of cyclical movements, 43
 Interest rates, 68-9, 73, 92, 99, 187, 204-5, 212
 Invention, industrial, 14, 18, 211
 Inventory (*see* Stocks of goods)
 Iron production, 53
 Kahn, R. F., 85n
 Keynes, J. M., 59, 60
 King, Willford I., 83n, 106n, 108n
 Kuznets, Simon, 75
 Labor, 130, 131-4
 Labor saving, 16, 123, 214-5
 Lavatories, 27, 31, 32n, 50
 Lead, 50
 Leads and lags in cyclical movements, 26-73
 Leather, 64
 Leong, Y. S., 47, 228, 231, 232, 233
 Liberty (*see* Voluntary choice, Individualism)
 Loans, 68-9, 102-3
 Luxury goods, 44-7
 Machine-tool shipments, 26, 50, 230, 234
 Manufacturing, 228, 232, 233
 Markets, 20, 58-9
 Martin, Robert F., 222n
 Meat animals, 64
 Meat packing, 64
 Merchants (*see* Trade, Stocks of goods)
 Mills, F. C., 97, 103n, 104
 Mines, Bureau of, 214

INDEX

- Mitchell, W. C., 8, 10, 17n, 73, 172n
Moulton, H. G., 193n
- National Bureau of Economic Research, 7-8, 75, 97
- New era, 21, 98, 115-6 (*see also* Psychological factors)
- New goods, 143-4, 171-2, 211, 215
- Normal growth curves, 169-74
- Oil, 113 (*see also* Petroleum)
- Originating factors 14-21, 184-7
- Over-building (*see* Surplus capacity)
- Overhead costs (*see* Costs)
- Over-production, 6, 23, 54, 113
- Over-saving, 6, 23
- Passenger cars (*see* Automobiles)
- Payrolls, 51-3, 73, (*see also* Wages)
- Pederson, Victoria, 120n
- Persons, Warren M., 86
- Petroleum, 53
- Pig iron, 26, 50, 230, 233
- Planning (*see* Control)
- Prediction (*see* Forecasting)
- Prices, 50, 73, 77, 89-92, 111, 129, 154-6, 187-8, 199-201
- Producers' goods, 26, 47, 48, 50-3, 73-5, 78-9, 228, 229-30, 232, 233
- Production, volume of, 50-3, 73-5, 194-7, 231
- Profits, 79, 91-5, 106-7, 129, 154-6, 188, 200-1
- Psychological factors, 214, 215
- Public works, 28, 32n, 198-9
- Purchases
consumers', 48-9, 71-2, 82-9, 167-9, 188
producers', 86
postponable, 45, 82-3, 108-9, 113
Purchasing power, 43, 48, 64-5, 80-1
- Random causes, 31, 62-3, 184-6
- Recession (downturn), 178-9
- Reference cycles, 10, 11, 26
- Replacement, 34, 35, 42, 190
- Reserves, 203-4, 222-3
- Responses of the business system, 14, 17-21, 187-90
- Revival (upturn), 174-7
- Rorty, M. C., 85n 106n, 109n
- Salaries, 79, 106
- Savings, 136-7, 140-1, 147-51, 152-4, 189, 212, 215-8
- Schumpeter, Joseph, 172
- Securities, 56-8, 77, 111-2, 115 (*see also* Speculation)
- Slaughtering, 64
- Social insurance (*see* Insurance, social)
- Specie payment, 117 (*see also* Gold)
- Specific cycles, 9, 10, 12
- Speculation, 58-61, 96, 98-101, 114-6, 188, 200, 207-8
- Spending (*see* Purchases)
- Spending power (*see* Purchasing power)
- Stabilization, 93-5, 191-5, 199-207
- Stages of cycles in National Bureau's series, 9, 26n, 228-34
- Standard of living, 119, 225
- Standard Statistics Corporation, 47, 231
- Steel
ingots, 26, 50, 230, 233
sheets, 53

INDEX

- structural, 27, 31, 32n, 51, 57-8, 230, 233
- Stock exchange (*see* Securities, Speculation)
- Stocks (*see* Securities)
- Stocks of goods, 23, 33-6, 53-6, 86, 90, 112-3, 121, 190
- Sugar, 53
- Sun-spots, 19
- Supply, 129-31, 134
- Surplus capacity, 165
- Tariff, 119
- Taxes (*see* Financing of public works)
- Ten-year cycle, 96
- Textiles, 64
- Thornton, F. W., 145n
- Timing of cyclical movements, 20-1, 25, 26-73, 114, 228-31
- Trade,
foreign, 65-8, 157-8, 185
domestic, 20, 47, 71, 75, 90
- Trends, 210-8
- Trucks (*see* Automobiles)
- Under-consumption, 6, 23
- Under-saving, 23
- Unemployment, 7, 123, 132-4
- Valorization, 16
- Values (*see* Prices)
- Voluntary choice, spending and saving, 185-6, 191, 215-6
- Wages, 79, 92, 106-7, 112, 139-42, 187, 188, 201-7, 212-3
- Wars as disturbing factors, 19, 185
- Wheat, 64, 113
- Wolman, Leo, 199n
- Wool, 64
- Woolen manufacturing, 64
- Work-sharing (*see* Hours of labor)
- Zinc, 50

**PUBLICATIONS OF THE
NATIONAL BUREAU OF ECONOMIC RESEARCH**

INCOME IN THE UNITED STATES

By **WESLEY C. MITCHELL, WILLFORD I. KING, FREDERICK R. MACAULAY
AND OSWALD W. KNAUTH**

Volume I (1921) Summary 152 pp.

Volume II (1922) Details 440 pp.

DISTRIBUTION OF INCOME BY STATES IN 1919 (1922)

By **OSWALD W. KNAUTH** 30 pp., \$1.30

BUSINESS CYCLES AND UNEMPLOYMENT (1923)

By the **NATIONAL BUREAU STAFF** and 16 **COLLABORATORS** 405 pp., \$4.10

**EMPLOYMENT, HOURS AND EARNINGS IN PROSPERITY AND
DEPRESSION, UNITED STATES, 1920-22 (1923)**

By **WILLFORD I. KING** 147 pp.

THE GROWTH OF AMERICAN TRADE UNIONS, 1880-1923 (1924)

By **LEO WOLMAN** 170 pp., \$2.50

**INCOME IN THE VARIOUS STATES: ITS SOURCES AND DIS-
TRIBUTION, 1919, 1920 AND 1921 (1925)**

By **MAURICE LEVEN** 306 pp., \$3.50

BUSINESS ANNALS (1926)

By **WILLARD L. THORP**, with an introductory chapter, *Business Cycles
as Revealed by Business Annals*, by **WESLEY C. MITCHELL**

380 pp., \$2.50

MIGRATION AND BUSINESS CYCLES (1926)

By **HARRY JEROME** 256 pp., \$2.50

BUSINESS CYCLES: THE PROBLEM AND ITS SETTING (1927)

By **WESLEY C. MITCHELL** 489 pp., \$5.00

THE BEHAVIOR OF PRICES (1927)

By **FREDERICK C. MILLS** 598 pp.

TRENDS IN PHILANTHROPY (1928)

By **WILLFORD I. KING** 78 pp., \$1.00

RECENT ECONOMIC CHANGES (1929)

By the **NATIONAL BUREAU STAFF** and 15 **COLLABORATORS**

2 vol., 950 pp., per set, \$7.50

INTERNATIONAL MIGRATIONS

Volume I, Statistics (1929), compiled by **IMRE FERENCZI** of the Inter-
national Labour Office, and edited by **WALTER F. WILLCOX**

1,112 pp., \$7.00

Volume II, Interpretations (1931), edited by **WALTER F. WILLCOX**

715 pp., \$5.00

THE NATIONAL INCOME AND ITS PURCHASING POWER

(1930)

By **WILLFORD I. KING**

394 pp.

Out of print.

16. CORPORATION CONTRIBUTIONS TO ORGANIZED COMMUNITY WELFARE SERVICES (1930)
By PIERCE WILLIAMS and FREDERICK E. CROXTON 347 pp., \$2.00
17. PLANNING AND CONTROL OF PUBLIC WORKS (1930)
By LEO WOLMAN 260 pp., \$2.50
19. THE SMOOTHING OF TIME SERIES (1931)
By FREDERICK R. MACAULAY 172 pp., \$2.00
20. THE PURCHASE OF MEDICAL CARE THROUGH FIXED PERIODIC PAYMENT (1932)
By PIERCE WILLIAMS 308 pp., \$3.00
21. ECONOMIC TENDENCIES IN THE UNITED STATES: ASPECTS OF PRE-WAR AND POST-WAR CHANGES (1932)
By FREDERICK C. MILLS 639 pp., \$5.00
22. SEASONAL VARIATIONS IN INDUSTRY AND TRADE (1933)
By SIMON KUZNETS 455 pp., \$4.00
23. PRODUCTION TRENDS IN THE UNITED STATES SINCE 1870 (1934)
By ARTHUR F. BURNS 363 pp., \$3.50
24. STRATEGIC FACTORS IN BUSINESS CYCLES (1934)
By JOHN MAURICE CLARK 238 pp., \$1.50

Brookline Institute of Politics
and Economics, Poona 4.