

Employment

in Manufacturing, 1899—1939

*An Analysis of Its Relation to the*

*Volume of Production*

by Solomon Fabricant

National Bureau of

Economic Research, Inc.

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*(Resolution adopted October 25, 1926 and revised  
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## Director's Note

THIS report is one of several dealing with the trends of production and productivity in American industry since the opening of the twentieth century. Other volumes already published are *The Output of Manufacturing Industries, 1899-1937*, by Solomon Fabricant (1940); and *American Agriculture, 1899-1939: A Study of Output, Employment and Productivity*, by Harold Barger and Hans H. Landsberg (1942).

The study upon which this volume is based was made possible by funds granted by The Maurice and Laura Falk Foundation of Pittsburgh. The Falk Foundation is not, however, the author, publisher, or proprietor of this publication, and is not to be understood as approving or disapproving by virtue of its grant any of the statements made or views expressed herein.

William J. Carson  
*Executive Director*

National Bureau of Economic Research, Inc.  
December, 1942

## Preface

THIS study of trends in employment, and their relation to corresponding changes in production and unit labor requirements, deals only in bare outline with certain aspects of the development of the manufacturing sector of industry in the United States since 1899. The reader will not find here a description of the conditions of human labor inside factory walls, or an account of the rise of factory trade unions. Nor will he read here of the enterprise, skill and toil that have swelled the stream of fabricated products. Yet it is hoped that the statistical analysis presented in this report will illuminate all these developments for those patient enough to study the tables, charts, and textual discussion.

American manufacturing has a complex history. We can learn to understand its development only by moving carefully through a quagmire of statistical, economic, technological, legal, sociological and biographical facts. One step in this journey was taken in a previous National Bureau report, *The Output of Manufacturing Industries, 1899-1937* (published in 1940), in which the changes in the volume and composition of factory production were described in detail. In the present volume we trace the corresponding course of factory employment and labor per unit, and study their relation to the growth of output. The study is carried up through 1939, the most recent year in which a Census of Manufactures has been taken; it begins with 1899, when adequate statistics first began to be available at reasonably frequent intervals. (For a few individual manufacturing industries, however, we have been able to push the indexes as far back as 1869.)

A summary survey of the report's findings is presented in

the final chapter, together with a brief discussion of the relation between trends in manufacturing and our general economic development. The leisurely reader will turn first to Chapter 1 in which changes in total factory employment and output, and in the ratio between these quantities, are described. Trends characterizing the major groups of industries are discussed in Chapter 2. The longer account of changes in individual manufacturing industries is divided into three sections: Chapter 3, which surveys the trends in labor per unit; Chapter 4, in which attention is focused on employment and output and the bearing upon these magnitudes of changes in unit labor requirements, capital investment, prices and costs; and Chapter 5, which deals with the course of employment during the various stages of industrial growth.

The basic indexes, given in summary in the text, are presented in full in the appendices. There, also, appear notes on the definition of employment and output; and descriptions of the original data on which the indexes and other statistics cited in the text are based, except for information already published in *The Output of Manufacturing Industries, 1899-1937*.

Solomon Fabricant



## Author's Acknowledgments

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To all these friends I give my sincere thanks.

**S. F.**

# Contents.

DIRECTOR'S NOTE	vii
PREFACE	ix
AUTHOR'S ACKNOWLEDGMENTS	xi
1 AGGREGATE FACTORY EMPLOYMENT AND OUTPUT (3-27)	
Growth and Stagnation in Employment	3
Output in Relation to Employment	8
Reductions in the Work Week and their Relation to Employment per Unit of Product	12
Aggregate Manhours and Manhours per Unit	16
Significance of the Decline in Unit Labor Requirements	23
2 TRENDS AMONG MAJOR INDUSTRIAL GROUPS (28-42)	
Contributions of the Groups to Total Factory Employment and Output	28
Trends in Employment per Unit of Product	31
Interrelations between Output and Employment	33
Effects of Changes in the Composition of Output	37
3 LABOR PER UNIT OF PRODUCT IN INDIVIDUAL INDUSTRIES (43-82)	
Industrial Variation among Trends in Labor per Unit	43
Change in the Rate of Decline in Labor per Unit	57
Unit Labor Requirements and Industrial Evolution	73

4	EMPLOYMENT, OUTPUT AND RELATED QUANTITIES IN INDIVIDUAL INDUSTRIES	(83-113)
	Employment, Output and Labor per Unit	83
	Capital Assets	93
	Unit Costs and Prices	97
5	EMPLOYMENT DURING STAGES OF INDUSTRIAL GROWTH AND DECLINE	(114-152)
	Peaks in Employment and Output	115
	Employment during Growth and Decline of Output	122
	Industrial Flux and Changes in Employment	146
6	MANUFACTURING IN THE NATIONAL ECONOMY	(153-168)
	A Summary of Changes in American Factories	153
	Manufacturing Productivity and Industrial Development	160
	Factory Employment and Output and the National Economy	164

## APPENDICES

A	NOTE ON THE MEASUREMENT OF FACTORY EMPLOYMENT	(171-176)
B	NUMBER OF PERSONS IN MANUFACTURING INDUSTRIES	(179-230)
C	HOURS WORKED IN MANUFACTURING INDUSTRIES, PER WEEK PER WAGE EARNER	(233-243)
D	NOTE ON FACTORY OUTPUT	(247-249)
E	NOTE ON DATA CONCERNING MANUFACTURING CAPITAL	(253-257)

- F INDEXES OF OUTPUT, EMPLOYMENT, MAN-  
HOURS, EMPLOYMENT PER UNIT OF  
PRODUCT, AND MANHOURS PER UNIT OF  
PRODUCT IN MANUFACTURING INDUS-  
TRIES (261-332)
- G DERIVED TABLES UNDERLYING CERTAIN  
TEXT CHARTS (335-340)
- H ALTERNATIVE MEASURES OF CHANGE IN  
WAGE EARNERS PER UNIT OF PRODUCT (343-345)

# Text Tables

- 1 Individual Manufacturing Industries: Average Annual Percentage Changes in Wage Earners per Unit of Product 47-51
- 2 Individual Manufacturing Industries: Hours Worked per Week per Wage Earner, 1909 and 1937 53
- 3 Individual Manufacturing Industries: Aggregate Wage-Earner Hours and Wage Earners Employed per Unit of Product—Percentage Changes, 1909-37 54-55
- 4 Individual Manufacturing Industries: Wage Earners per Unit of Product—Average Annual Rates of Change between Selected Years 65-67
- 5 Individual Manufacturing Industries: Aggregate Wage-Earner Hours per Unit of Product—Average Annual Rates of Change between Selected Years 68
- 6 Individual Manufacturing Industries: Percentage Changes in Physical Output, Number of Wage Earners, and Wage Earners per Unit of Product, 1899-1937 84-85
- 7 Groups of Manufacturing Industries: Indexes of Output, Number of Wage Earners, Net Book Value of Capital Assets and Derived Ratios, 1937 relative to 1904 95
- 8 Individual Manufacturing Industries: Indexes of Unit Costs, Prices and Other Economic Quantities, 1937 relative to 1909 102-04
- 9 Frequency Distribution of Individual Manufacturing Industries by Census Year of Peak Employment and Output, 1899-1939 116-17
- 10 Frequency Distribution of Individual Manufacturing Industries by Difference between Census Years of Peak Employment and Output, 1899-1939 120-21
- 11 Individual Manufacturing Industries: Physical Output and Wage-Earner Employment—Average Annual Percentage Changes 123-28
- 12 Selected Manufacturing Industries: Physical Output and Wage-Earner Employment—Measures of Retardation in Growth 139-42
- 13 Increases and Decreases in Wage-Earner Employment in Manufacturing Industries, Selected Periods 148

# Appendix Tables

B-1	Average Number of Wage Earners in Manufacturing Industries	182-214
B-2	Number of Salaried Workers in Manufacturing Industries	218-20
B-3	Number of Proprietors and Firm Members in Manufacturing Industries	222-23
B-4	Number of Nonfactory Personnel in Manufacturing Industries	228
B-5	Aggregate Number of Personnel in Manufacturing Industries	230
C-1	All Manufacturing Industries Combined: Average Hours of Work per Week per Wage Earner	234-35
C-2	Selected Individual Industries: Hours Worked in Factories, per Week per Wage Earner	236-43
E-1	All Manufacturing Industries Combined: Estimates of Gross Capital Formation (Current Prices) and Net Capital Assets (Book Valuation)	256
E-2	Major Groups of Manufacturing Industries: Number of Wage Earners, Net Book Value of Capital Assets, and Capital Assets per Wage Earner, 1904 and 1937	257
F-1	Indexes of Output, Employment, Manhours, Employment per Unit of Product, and Manhours per Unit of Product in Manufacturing Industries	264-332
G-1	Major Groups and Total Manufacturing: Components of Percentage Change in Wage Earners Employed per Unit of Product, Selected Periods	335-37
G-2	Individual Manufacturing Industries: Wage Earners per Unit of Product—Frequency Distributions of Industries by Average Annual Rates of Change between Selected Years, and by Changes in Average Annual Rates of Change	338-39
G-3	Individual Manufacturing Industries: Ranked According to Change in Unit Costs, Prices and Other Economic Quantities, 1909-37	340
H-1	Major Groups and Total Manufacturing: Comparison of Alternative Measures of Wage Earners per Unit of Product—Percentage Changes over Specified Periods	345

# Charts

1	All Manufacturing Industries Combined: Number of Persons Engaged, 1899 and 1937	4
2	All Manufacturing Industries Combined: Indexes of Employment	7
3	All Manufacturing Industries Combined: Indexes of Output, Wage Earners Employed, and Total Employed	9
4	All Manufacturing Industries Combined: Indexes of Wage Earners and Total Workers per Unit of Product	11
5	All Manufacturing Industries Combined: Indexes of Employment and Manhours	17
6	All Manufacturing Industries Combined: Indexes of Wage Earners and Aggregate Wage-Earner Hours per Unit of Product	19
7	Major Groups of Manufacturing Industries: Relative Contributions to Wage-Earner Employment and Value Added for all Manufacturing Industries Combined, 1899 and 1937	29
8	Major Groups of Manufacturing Industries: Number of Wage Earners Employed per Unit of Product (1899:100)	32
9	Major Groups of Manufacturing Industries: Wage-Earner Employment, Physical Output, and Number of Wage Earners Employed per Unit of Product	34-35
10	Major Groups and Total Manufacturing: Components of Percentage Change in Employment per Unit of Product, Selected Periods	38
11	Individual Manufacturing Industries: Index of Wage Earners Employed per Unit of Product, 1937 (1899:100)	45
12	Selected Manufacturing Industries: Indexes of Wage Earners per Unit of Product, and Manhours per Unit of Product	59-63
13	Wage Earners per Unit of Product: Frequency Distributions of Individual Manufacturing Industries by Average Annual Rate of Change between Selected Years	70

- 14 Wage Earners per Unit of Product: Frequency Distributions of Individual Manufacturing Industries by Changes in Average Annual Rate of Change between Selected Years 71
- 15 Relation between Indexes of Wage-Earner Employment and of Physical Output, 1937 (1899:100) 87
- 16 Individual Manufacturing Industries: Change in Physical Output, Wage Earners Employed, and Wage Earners Employed per Unit of Product, 1899-1937 90-91
- 17 Individual Manufacturing Industries: Ranked According to Change in Unit Costs, Prices and Other Economic Quantities, 1909-37 99
- 18 Selected Manufacturing Industries: Indexes of Physical Output, and Wage Earners Employed 130-37