

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

Volume Title: Capital and Rates of Return in Manufacturing Industries

Volume Author/Editor: George J. Stigler

Volume Publisher: UMI

Volume ISBN: 0-87014-078-7

Volume URL: <http://www.nber.org/books/stig63-1>

Publication Date: 1963

Chapter Title: Introductory material for "Capital and Rates of Return in Manufacturing Industries", including Preface

Chapter Author: George J. Stigler

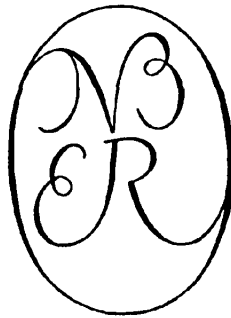
Chapter URL: <http://www.nber.org/chapters/c0648>

Chapter pages in book: (p. -21 - -9)

Capital
and Rates of Return
in Manufacturing Industries

GEORGE J. STIGLER

UNIVERSITY OF CHICAGO



A STUDY BY THE
NATIONAL BUREAU OF ECONOMIC RESEARCH, NEW YORK

PUBLISHED BY
PRINCETON UNIVERSITY PRESS
PRINCETON, NEW JERSEY

1963

Copyright © 1963 by National Bureau of Economic Research, Inc.

All Rights Reserved

L.C. Card No. 62-21109

Printed in the United States of America

CAPITAL
AND RATES OF RETURN
IN MANUFACTURING INDUSTRIES

NATIONAL BUREAU OF ECONOMIC RESEARCH

NUMBER 78, GENERAL SERIES

NATIONAL BUREAU OF ECONOMIC RESEARCH

1963

OFFICERS

Harold M. Groves, *Chairman*
 Arthur F. Burns, *President*
 Albert J. Hettinger, Jr., *Vice-President*
 Donald B. Woodward, *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

Robert B. Anderson, *New York City*
 Wallace J. Campbell, *Nationwide Insurance*
 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*
 A. J. Hayes, *International Association of Machinists*
 Albert J. Hettinger, Jr., *Lazard Frères and Company*

Nicholas Kelley, *Kelley Drye Newhall Maginnes & Warren*
 H. W. Laidler, *League for Industrial Democracy*
 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, *South Kent, Connecticut*
 Joseph H. Willits, *Armonk, New York*
 Donald B. Woodward, *A. W. Jones and Company*
 Theodore O. Yntema, *Ford Motor Company*

DIRECTORS BY UNIVERSITY APPOINTMENT

V. W. Bladen, *Toronto*
 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*

Walter W. Heller, *Minnesota*
 Maurice W. Lee, *North Carolina*
 Lloyd G. Reynolds, *Tale*
 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*
 Harold G. Halcrow, *American Farm Economic Association*
 Theodore V. Houser, *Committee for Economic Development*

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

Shepard Morgan, *Norfolk, Connecticut*

N. I. Stone, *New York City*

RESEARCH STAFF

Moses Abramovitz
 Gary S. Becker
 William H. Brown, Jr.
 Gerhard Bry
 Arthur F. Burns
 Phillip Cagan
 Joseph W. Conrad
 Frank G. Dickinson
 James S. Earley
 Richard A. Easterlin
 Solomon Fabricant
 Albert Fishlow
 Milton Friedman

Victor R. Fuchs
 Raymond W. Goldsmith
 Challis A. Hall, Jr.
 Millard Hastay
 Daniel M. Holland
 Thor Hultgren
 F. Thomas Juster
 C. Harry Kahn
 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
 Herbert B. Woolley
 Victor Zarnowitz

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)*

Contents

PREFACE	xiii
1. Introduction	3
2. The Flow of Investment and the Pattern of Rates of Return	11
3. Competition and the Rate of Return	54
4. The Rate of Investment	72
5. Labor and Capital	92
APPENDIXES	
A. Construction of the Basic Tables on Capital and Rates of Return	107
B. Construction of the All-Manufactures Corporate Capital and Rate of Return Series for 1926-58	203
C. The Concentration Ratios	206
D. The Employee and Annual Earnings Data	216
E. Capital and Rates of Return in 1957 and 1958, on the New Industrial Classification	220
INDEX	227

T A B L E S

1. Average Annual Percentage Change in Capital in Manufacturing Industries, 1947-56	5
2. Distribution of Industries, by Ownership Specialization and Industry Specialization of Companies in Manufacturing, Measured by Payroll, 1954	8
3. Assets in Manufacturing Industries, 1938-57	14
4. Annual Percentage Increase of Capital in Munitions and Other Industries, Book Values, 1938-47	16
5. Percentage Increase of Capital in Construction Goods Industries, Book Values, 1947-56	17
6. Percentage Increase in Total Assets in Manufacturing Industries, 1938-57	18
7. Rank Correlation of Percentage Increase in Assets Among Manufacturing Industries, Pairs of Years, 1938-57	30
8. Industries With Largest Relative Increase and Decrease in Number of Corporations, 1948-56	32
9. Relative Increase in Assets of Industries and Average Corporate Assets, 1948-56	33
10. Percentage Rate of Return in Manufacturing Industries, 1938-57	35
11. Dispersion of Rates of Return in Manufacturing Industries, 1938-57	37
12. Correlation Between Rates of Return in Manufacturing Industries in Successive Years, 1938-57	49
13. Correlation of Percentage Change in Assets, in Book Values and 1947 Prices, Manufacturing Industries, 1938-57	50
14. Comparison of Rate of Return, in Book Values and 1947 Prices, Two-Digit Industries, Selected Years, 1938-56	52
15. Distribution of Unconcentrated Manufacturing Industries, by Average Rate of Return, Three Periods, 1938-56	58
16. Distribution of Unconcentrated Industries, by Rate of Return, Before and After Adjustment for Small Business Salary Withdrawals, Two Periods, 1938-54	60
17. Average Rate of Return and Standard Deviation of Rates of Return, in Concentrated, Unconcentrated, and Ambiguous Industries, 1938-57	68
18. Correlation of Rates of Return for Concentrated, Unconcentrated, and Ambiguous Industries, Two Decades, 1938-57	70

TABLES

19. Income, Dividends and Interest Paid, Retained Earnings, and Increase in Capital, All Manufacturing Industries, 1947-58	74
20. Annual Regression of Relative Change in Corporate Capital on Relative Change in Receipts and Profit Rate, Ninety-Eight Industries, 1948-57	77
21. Regression of Percentage Change in Capital on Percentage Change in Receipts and on Profit Rate, 1938-56	81
22. Regression of Percentage Change in Capital on Percentage Change in Output and on Profit Rates, Twenty-One Major Industries, 1947-54	82
23. Correlation Between Investment and Profit Rates, Change in Market Value and Receipts, Twenty-One Industries, Selected Years, 1949-54	85
24. Regression of Relative Investment on Previous Relative Change in Receipts and Profit Rates, Ninety-Eight Industries, 1949-57	87
25. Regression of Relative Change in Capital on Relative Change in Receipts and Profit Rate, by Industry Structure, Two Periods, 1938-56	88
26. Technical Progress, Investment, and Rate of Return, 1947-54	90
27. Aggregate Payroll as Percentage of Total Distributive Shares in Manufacturing Industries, Selected Years, 1939-54	93
28. Annual Earnings Per Worker and Rate of Return on Capital in Manufacturing Industries, Selected Years and Periods, 1938-55	95
29. Annual Earnings and Capital Per Worker, Manufacturing Industries, 1939 and 1954	97
30. Annual Earnings of Employees, and Capital-Receipts Ratio, for Small and Large Plants and Firms, 1947 and 1954	103
A-1. Textile Mill Products: Receipts Cross-Classified by 1948 and 1947 Industry Classes	110
A-2. Ratio of Industry Rented Assets to Owned Assets, 1938-57	112
A-3. Estimate of Rented Property as Share of Owned Assets, by Industry Class, 1948 and 1953	113
A-4. Procedure for Estimating Noncorporate Receipts in Non-census Years, Confectionery Products Industry	115
A-5. Ratio of Assets to Sales in Manufacturing Corporations, 1947	116
A-6. Noncorporate Share of Value of Products, 1947	117
A-7. Average Life of Equipment in Manufacturing Industries	121

TABLES

A-8. Illustrative Calculation of Price Index of Book Value of Machinery and Equipment, Seventeen-Year Life, Iron and Steel Products	122
A-9. Officers' Compensation and Profits in Apparel Corporations, 1941	126
A-10. Depreciation Charges as Per Cent of Net Profit After Taxes in Manufacturing Industries, 1947	128
A-11. Rates of Return in Current Prices, Manufacturing Industries, 1948-57	130
A-12. Amortization (Accelerated Depreciation) in Manufacturing Corporations, 1940-57	131
A-13. Hypothetical Adjustments for Accelerated Depreciation, Metals and Metal Products	133
Basic Tables, Data on Capital and Rates of Return, All Manufacturing Industries, 1938-47 and 1947-57	
A-14. Beverages, 1938-47	139
A-15. Food and Kindred Products, 1938-47	140
A-16. Tobacco and Products, 1938-47	142
A-17. Textile Mill Products, 1938-47	143
A-18. Apparel and Products Made From Fabrics, 1938-47	145
A-19. Basic Lumber, 1938-47	146
A-20. Furniture and Finished Lumber, 1938-47	147
A-21. Paper and Allied Products, 1938-47	148
A-22. Printing and Publishing, 1938-47	149
A-23. Chemicals and Allied Products, 1938-47	151
A-24. Petroleum and Coal Products, 1938-47	153
A-25. Rubber and Products, 1938-47	154
A-26. Leather and Products, 1938-47	155
A-27. Stone, Clay, and Glass Products, 1938-47	156
A-28. Metals and Metal Products, 1938-47	158
A-29. Machinery and Equipment, Except Transportation and Electrical, 1938-47	160
A-30. Electrical Machinery and Equipment, 1938-47	162
A-31. Transportation Equipment, Except Vehicles, 1938-47	164
A-32. Motor Vehicles and Parts, 1938-47	166
A-33. Residual Manufacturing, 1938-47	167
A-34. Ordnance Equipment, 1938-47	168
A-35. Total Manufacturing, 1938-47	169

TABLES

A-36. Beverages, 1947-57	170
A-37. Food and Kindred Products, 1947-57	171
A-38. Tobacco Products, 1947-57	173
A-39. Textile Mill Products, 1947-57	174
A-40. Apparel and Products Made From Fabrics, 1947-57	176
A-41. Basic Lumber, 1947-57	177
A-42. Furniture and Finished Lumber, 1947-57	178
A-43. Paper and Allied Products, 1947-57	179
A-44. Printing and Publishing, 1947-57	180
A-45. Chemicals and Allied Products, 1947-57	182
A-46. Petroleum and Coal Products, 1947-57	184
A-47. Rubber Products, 1947-57	185
A-48. Leather and Products, 1947-57	186
A-49. Stone, Clay, and Glass Products, 1947-57	187
A-50. Primary Metal Products, 1947-57	189
A-51. Fabricated Metal Products, 1947-57	190
A-52. Machinery, Except Transportation and Electrical, 1947-57	192
A-53. Electrical Machinery and Equipment, 1947-57	194
A-54. Transportation Equipment, Except Vehicles, 1947-57	196
A-55. Motor Vehicles, 1947-57	198
A-56. Professional and Scientific Instruments, 1947-57	199
A-57. Residual Manufactures, 1947-57	200
A-58. Ordnance, 1947-57	201
A-59. Total Manufacturing, 1947-57	202
B-1. Corporate Assets, Excluding Other Investments, and Rates of Return, 1926-58	203
C-1. Concentration Ratios for Manufacturing Industries, 1935 and 1947	211
C-2. Concentration Ratios for Manufacturing Industries, 1947 and 1954	213
D-1. Employment and Earnings in Manufacturing Industries, 1939 and 1947	216
D-2. Employment and Earnings in Manufacturing Industries, 1947 and 1954	218
E-1. Corporate Assets, Rates of Return, and Noncorporate Shares, 1957 and 1958, by 1958 Standard Industrial Classification	221

CHARTS

1. Corporate Capital and Rates of Return in Manufacturing Industries, 1926-58 12
2. Frequency Distribution of Manufacturing Industries, by Annual Rate of Change of Capital, 1938-57 20
3. Frequency Distribution of Manufacturing Industries, by Annual Rate of Return, 1938-57 38

Preface

CONSIDERING how often our economic system is described as “capitalistic” or “the profit system,” it is paradoxical that we have had relatively little information on the stock of capital or the rate of profits it yields in various industries. Ralph C. Epstein’s book of nearly thirty years ago, *Industrial Profits in the United States* (New York, National Bureau of Economic Research, 1934), was for long the only tolerably comprehensive source, and even now the Federal Trade Commission–Securities and Exchange Commission quarterly reports have important limitations.

I am confident, therefore, that economists will welcome the comprehensive and fairly detailed data on capital and rates of return in all manufacturing industries here presented. Their debt (and mine) is primarily to my two associates who conducted this laborious and difficult work. Mary O. Conlon and Claire Friedland have successively undertaken this responsibility and discharged it with skill and conscientiousness. At various times Nestor Terleckyj, Murray Brown, Arthur D’Antonio, George Friedman, Ann Novick, and Robert V. Goldstein also assisted in this work.

The analytical essays which comprise the larger part of the text apply the data, with varying success, to three traditional problems of economics: the tendency of rates of return to equality, determinants of the rate of investment, and relationships between capital and labor. My debt to Miss Friedland is equally heavy in this work.

Various readers of the manuscript have offered helpful suggestions, and particular acknowledgement is due to Gary S. Becker, Ralph L. Nelson, and Victor Fuchs. I am also indebted to the Directors who reviewed the manuscript, Melvin G. de Chazeau, Murray Shields, and Boris Shishkin.

Thanks are due also to Margaret T. Edgar for a careful and thoughtful editing of the manuscript, and to H. Irving Forman for an excellent job of drawing the charts.

GEORGE J. STIGLER

And, according to the Robotic Industries Association, manufacturers see the potential. Specifically, robot orders are up 5.2% through the third quarter of 2019, with 23,894 robotic units ordered, a value of \$1.3 billion. Cobots are "easier to digest, faster to deploy and generate returns quicker," says Joe Campbell, Universal Robots' senior manager of strategic marketing and applications. "The enabler is the ability to work side-by-side with skilled operators." Embracing additive manufacturing and 3D printing. The 3D printing industry was worth \$3 billion in 2013 and grew to \$7 billion in 2017. Specifically, more executives in manufacturing are extremely concerned about IoT and cybersecurity than in any other industry PwC surveyed. "Capital and Rates of Return in Manufacturing Industries," NBER Books, National Bureau of Economic Research, Inc, number stig63-1, January. Handle: RePEc:nbr:nberbk:stig63-1 Note: AP IO PR. as. HTML HTML with abstract plain text plain text with abstract BibTeX RIS (EndNote, RefMan, ProCite) ReDIF JSON. Download full text from publisher. To our knowledge, this item is not available for download. To find whether it is available, there are three options: 1. Check below whether another version of this item is available online.