

The Economics of Technological Change

Selected Readings

Edited by Nathan Rosenberg

Penguin Books

Contents

Introduction 9

Part One

The Nature and the Process of Technological Change 11

- 1 Joseph Schumpeter (1928)
The Instability of Capitalism 13
- 2 A. P. Usher (1955)
Technical Change and Capital Formation 43
- 3 Vernon Ruttan (1959)
*Usher and Schumpeter on Invention, Innovation and
Technological Change* 73
- 4 M. Blaug (1963)
A Survey of the Theory of Process-Innovations 86

Part Two

The Determinants of Technological Change 115

- 5 Jacob Schmookler (1962)
Economic Sources of Inventive Activity 117
- 6 William Parker (1961)
Economic Development in Historical Perspective 137
- 7 Richard Nelson (1959)
The Simple Economics of Basic Scientific Research 148
- 8 Kenneth Arrow (1962)
*Economic Welfare and the Allocation of Resources
for Invention* 164
- 9 Zvi Griliches (1958)
*Research Costs and Social Returns: Hybrid Corn
and Related Innovations* 182
- 10 William Fellner (1961)
Two Propositions in the Theory of Induced Innovations 203

Part Three The Diffusion of New Technology 209

- 11 Zvi Griliches (1960)
Hybrid Corn and the Economics of Innovation 211
- 12 Paul David (1966)
The Mechanization of Reaping in the Ante-Bellum Midwest 229
- 13 Peter Temin (1964)
A New Look at Hunter's Hypothesis about the Ante-Bellum Iron Industry 274
- 14 Edwin Mansfield (1961)
Technical Change and the Rate of Imitation 284

Part Four

Long-Term Consequences of Technological Change 317

- 15 Moses Abramovitz (1956)
Resource and Output Trends in the United States since 1870 320
- 16 Robert Solow (1957)
Technical Change and the Aggregate Production Function 344
- 17 Edward Denison (1962)
United States Economic Growth 363
- 18 Zvi Griliches (1963)
The Sources of Measured Productivity Growth: United States Agriculture, 1940-60 382

Part Five

International Aspects of Technological Change 409

- 19 Edward Ames and Nathan Rosenberg (1963)
Changing Technological Leadership and Industrial Growth 413
- 20 Raymond Vernon (1966)
International Investment and International Trade in the Product Cycle 440

21	Robert Baldwin (1956)	
	<i>Patterns of Development in Newly Settled Regions</i>	461
22	Robert Solo (1966)	
	<i>The Capacity to Assimilate an Advanced Technology</i>	480
	Further Reading	489
	Acknowledgements	493
	Author Index	495
	Subject Index	501