

Contents

Acknowledgments / xv A Note to Instructors / xvii Introduction / xix

PART I AN INTRODUCTION TO ECOLOGICAL ECONOMICS / 1

Chapter 1 Why Study Economics? / 3

What Is Economics? / 3

The Purpose of This Textbook / 6

Coevolutionary Economics / 7

The Era of Ecological Constraints / 11

Big Ideas to Remember / 14

Chapter 2 The Fundamental Vision / 15

The Whole and the Part / 15

Optimal Scale / 16

Diminishing Marginal Returns and Uneconomic Growth / 19

A Paradigm Shift / 23

Say's Law: Supply Creates Its Own Demand / 26

Leakages and Injections / 26

Linear Throughput and Thermodynamics / 29

Big Ideas to Remember / 35

Chapter 3 Ends, Means, and Policy / 37

Ends and Means: A Practical Dualism / 37

The Presuppositions of Policy / 43

Determinism and Relativism / 44

The Ends-Means Spectrum / 48

Three Strategies for Integrating Ecology and Economics / 51

Big Ideas to Remember / 57

Conclusions to Part I / 58

PART II THE CONTAINING AND SUSTAINING ECOSYSTEM: THE WHOLE / 59

Chapter 4 The Nature of Resources and the Resources of Nature / 61

A Finite Planet / 62

The Laws of Thermodynamics / 64

Stock-Flow Resources and Fund-Service Resources / 70

Excludability and Rivalness / 73 Goods and Services Provided by the Sustaining System / 74 Big Ideas to Remember / 76

Chapter 5 Abiotic Resources / 77

Fossil Fuels / 78
Mineral Resources / 83
Water / 87
Ricardian Land / 88
Solar Energy / 89
Summary Points / 91
Big Ideas to Remember / 92

Chapter 6 Biotic Resources / 93

Ecosystem Structure and Function / 93
Renewable Resources / 97
Ecosystem Services / 103
Waste Absorption Capacity / 107
Big Ideas to Remember / 110

Chapter 7 From Empty World to Full World / 111

Fossil Fuels / 113
Mineral Resources / 116
Water / 116
Renewable Resources / 118
Waste Absorption Capacity / 119
Big Ideas to Remember / 122
Conclusions to Part II / 123

PART III MICROECONOMICS / 125

Chapter 8 The Basic Market Equation / 127

Components of the Equation / 128
What Does the Market Equation Mean? / 133
Monopoly and the Basic Market Equation / 135
Non-Price Adjustments / 136
Supply and Demand / 138
Big Ideas to Remember / 145

Chapter 9 Supply and Demand / 147

A Shift in the Curve Versus Movement Along
the Curve / 147

Equilibrium P and Q, Shortage and Surplus / 149
Elasticity of Demand and Supply / 153
The Production Function / 156
The Utility Function / 161
Big Ideas to Remember / 164

Chapter 10 Market Failures / 165

Characteristics of Market Goods / 165

Rivalness / 167

Open Access Regimes / 169

Excludable and Nonrival Goods / 173

Pure Public Goods / 177

Externalities / 184

Missing Markets / 188

Summary Points / 191

Big Ideas to Remember / 192

Chapter 11 Market Failures and Abiotic Resources / 193

Fossil Fuels / 194

Mineral Resources / 200

Freshwater / 204

Ricardian Land / 206

Solar Energy / 208

Big Ideas to Remember / 209

Chapter 12 Market Failures and Biotic Resources / 211

Renewable Resource Stocks and Flows / 211

Renewable Resource Funds and Services / 222

Waste Absorption Capacity / 226

Biotic and Abiotic Resources: The Whole System / 230

Big Ideas to Remember / 231

Chapter 13 Human Behavior and Economics / 233

Consumption and Well-Being / 235

Rationality / 241

Self-Interest / 243

Experimental Evidence / 244

The Spectrum of Human Behavior / 250

A New Model of Human Behavior / 254

Big Ideas to Remember / 257

Conclusions to Part III / 258

PART IV MACROECONOMICS / 258

Chapter 14 Macroeconomic Concepts: GNP and Welfare / 261

A Troubled Marriage / 262

Gross National Product / 266

Sustainable Income / 271

Alternative Measures of Welfare: MEW,

ISEW, and GPI / 274

Beyond Consumption-Based Indicators of Welfare / 277

Big Ideas to Remember / 284

Chapter 15 Money / 285

Virtual Wealth / 288 Seigniorage / 289

The Fractional Reserve System / 292

Money as a Public Good / 293

Money and Thermodynamics / 295

Big Ideas to Remember / 299

Chapter 16 Distribution / 301

Pareto Optimality / 301

The Distribution of Income and Wealth / 304

The Functional and Personal Distribution of Income / 305

Measuring Distribution / 307

Consequences of Distribution for Community and

Health / 311

Intertemporal Distribution of Wealth / 312

Big Ideas to Remember / 320

Chapter 17 The IS-LM Model / 321

IS: The Real Sector / 323

LM: The Monetary Sector / 326

Combining IS and LM / 329

Exogenous Changes in IS and LM / 330

IS-LM and Monetary and Fiscal Policy / 333

IS-LM in the Real World / 345

Adapting IS-LM to Ecological Economics / 347

Big Ideas to Remember / 350

Conclusions to Part IV / 351

PART V INTERNATIONAL TRADE / 353

Chapter 18 International Trade / 355

The Classical Theory: Comparative Advantage / 355

Kinks in the Theory / 358

Capital Mobility and Comparative Advantage / 360

Absolute Advantage / 362

Globalization vs. Internationalization / 363

The Bretton Woods Institutions / 364

The World Trade Organization / 365

Summary Points / 367

Big Ideas to Remember / 367

Chapter 19 Globalization / 369

Efficient Allocation / 369

Sustainable Scale / 378

Just Distribution / 381 Summary Points / 388 Big Ideas to Remember / 388

Chapter 20 Financial Globalization / 389

Balance of Payments / 390
Exchange Rate Regimes / 391
Theories About Economic Stability / 393
Global Financial Liberalization / 395
The Origins of Financial Crisis / 397
Ecological Economic Explanations of
Financial Crisis / 401
Finance and Distribution / 404
What Should Be Done About Global
Financial Crises? / 405
Big Ideas to Remember / 408
Conclusions to Part V / 409

PART VI POLICY / 411

Chapter 21 General Policy Design Principles / 413

The Six Design Principles / 414
Which Policy Comes First? / 417
Controlling Throughput / 420
Price vs. Quantity as the Policy Variable / 420
Source vs. Sink / 422
Policy and Property Rights / 424
Big Ideas to Remember / 426

Chapter 22 Sustainable Scale / 427

Direct Regulation / 427
Pigouvian Taxes / 430
Pigouvian Subsidies / 431
Cap and Trade / 433
Policy in Practice / 439
Big Ideas to Remember / 440

Chapter 23 Just Distribution / 441

Caps on Income and Wealth / 442
Minimum Income / 445
Distributing Returns from the Factors
of Production / 447
Additional Policies / 456
Big Ideas to Remember / 456

Chapter 24 Efficient Allocation / 457

Pricing and Valuing Nonmarket Goods and Services / 457 Macro-Allocation / 464 Spatial Aspects of Nonmarket Goods / 468 Redefining Efficiency / 474 Big Ideas to Remember / 476

Looking Ahead / 477

Glossary / 481 Suggested Readings / 495 About the Authors / 499 Index / 501