

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 / 5 Coevolutionary Economics / 7

The Era of Ecological Constraints / 10

Big Ideas to Remember / 13

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 / 50

Big Ideas to Remember / 56 Conclusions to Part I / 57

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 / 72

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 / 98

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 / 121

Conclusions to Part II / 122

PART III MICROECONOMICS / 123

Chapter 8 The Basic Market Equation / 125

Components of the Equation / 126

What Does the Market Equation Mean? / 131

Monopoly and the Basic Market Equation / 133

Non-Price Adjustments / 134

Supply and Demand / 136

Big Ideas to Remember / 140

Chapter 9 Supply and Demand / 141

A Shift in the Curve Versus Movement Along the

Curve / 141

Equilibrium P and Q, Shortage and Surplus / 143

Elasticity of Demand and Supply / 146

The Production Function / 148

The Utility Function / 152

Big Ideas to Remember / 155

Chapter 10 Market Failures / 157

Characteristics of Market Goods / 157

Rivalness / 159

Open Access Regimes / 161

Excludable and Nonrival Goods / 164

Pure Public Goods / 168

Externalities / 175

Missing Markets / 180

Summary Points / 182

Big Ideas to Remember / 183

Chapter 11 Market Failures and Abiotic Resources / 185

Fossil Fuels / 186

Mineral Resources / 192

Freshwater / 196

Ricardian Land / 198

Solar Energy / 200

Big Ideas to Remember / 200

Chapter 12 Market Failures and Biotic Resources / 201

Renewable Resource Stocks and Flows / 201

Renewable Resource Funds and Services / 211

Waste Absorption Capacity / 215

Biotic and Abiotic Resources: The Whole System / 218

Big Ideas to Remember / 219

Conclusions to Part III / 220

PART IV MACROECONOMICS / 221

Chapter 13 Macroeconomic Concepts: GNP and Welfare / 223

A Troubled Marriage / 224

Gross National Product / 228

Sustainable Income / 232

Alternative Measures of Welfare: MEW and ISEW / 233

Beyond Consumption-Based Indicators of Welfare / 237

Big Ideas to Remember / 244

Chapter 14 Money / 245

Virtual Wealth / 248

Seigniorage / 249

The Fractional Reserve System / 252

Money as a Public Good / 253

Money and Thermodynamics / 255

Big Ideas to Remember / 258

Chapter 15 Distribution / 259

Pareto Optimality / 259

The Distribution of Income and Wealth / 262

The Functional and Personal Distribution of Income / 263

Measuring Distribution / 264

Consequences of Distribution for Community and

Health / 267

Intertemporal Distribution of Wealth / 268

Big Ideas to Remember / 276

Chapter 16 The IS-LM Model / 277

IS: The Real Sector / 279

LM: The Monetary Sector / 282

Combining IS and LM / 285

Exogenous Changes in IS and LM / 286

IS-LM and Monetary and Fiscal Policy / 289

IS-LM in the Real World / 299

Adapting IS-LM to Ecological Economics / 302

Big Ideas to Remember / 304

Conclusions to Part IV / 305

PART V INTERNATIONAL TRADE / 307

Chapter 17 International Trade / 309

The Classical Theory: Comparative Advantage / 309

Kinks in the Theory / 312

Capital Mobility and Comparative Advantage / 314

Absolute Advantage / 316

Globalization vs. Internationalization / 317

The Bretton Woods Institutions / 318

The World Trade Organization / 319

Summary Points / 321

Big Ideas to Remember / 321

Chapter 18 Globalization / 323

Efficient Allocation / 323

Sustainable Scale / 331

Just Distribution / 333

Summary Points / 340

Big Ideas to Remember / 341

Chapter 19 International Flows and Macroeconomic Policy / 343

Balance of Payments / 344

Exchange Rate Regimes / 344

Capital Mobility and National Policy Levers / 346

Economic Stability / 348 Big Ideas to Remember / 355 Conclusions to Part V / 356

PART VI POLICY / 357

Chapter 20 General Policy Design Principles / 359

The Six Design Principles / 360
Which Policy Comes First? / 363
Controlling Throughput / 365
Price vs. Quantity as the Policy Variable / 366
Source vs. Sink / 368
Policy and Property Rights / 369
Big Ideas to Remember / 372

Chapter 21 Sustainable Scale / 373

Direct Regulation / 373 Pigouvian Taxes / 376 Pigouvian Subsidies / 378 Tradeable Permits / 379 Policy in Practice / 385 Big Ideas to Remember / 387

Chapter 22 Just Distribution / 389

Caps on Income and Wealth / 390 Minimum Income / 393 Distributing Returns from the Factors of Production / 395 Additional Policies / 404 Big Ideas to Remember / 404

Chapter 23 Efficient Allocation / 405

Pricing and Valuing Nonmarket Goods and Services / 405 Macro-Allocation / 412 Spatial Aspects of Nonmarket Goods / 415 Redefining Efficiency / 422 Big Ideas to Remember / 424

Looking Ahead / 425

Glossary / 429 Suggested Readings / 443 About the Authors / 447 Index / 449