Douglass C. North

Robert W. Fogel

In honor of our dissertation advisors,
Douglass C. North and Robert W. Fogel,
Nobel Laureates in Economics, 1993
Brief Contents

PREFACE

CHAPTER 1 Growth, Welfare, and the American Economy

PART 1 The Colonial Era: 1607–1776

CHAPTER 2 Founding the Colonies
CHAPTER 3 Colonial Economic Activities
CHAPTER 4 The Economic Relations of the Colonies
CHAPTER 5 Economic Progress and Wealth
CHAPTER 6 Three Crises and Revolt

PART 2 The Revolutionary, Early National, and Antebellum Eras: 1776–1860

CHAPTER 7 Hard Realities for a New Nation
CHAPTER 8 Land and the Early Westward Movements
CHAPTER 9 Transportation and Market Growth
CHAPTER 10 Market Expansion and Industry in First Transition
CHAPTER 11 Labor during the Early Industrial Period
CHAPTER 12 Money and Banking in the Developing Economy
CHAPTER 13 The Entrenchment of Slavery and Regional Conflict

PART 3 The Reunification Era: 1860–1920

CHAPTER 14 War, Recovery, and Regional Divergence
CHAPTER 15 Agriculture’s Western Advance
CHAPTER 16 Railroads and Economic Change
CHAPTER 17 Industrial Expansion and Concentration
CHAPTER 18 The Emergence of America’s Labor Consciousness
CHAPTER 19 Money, Prices, and Finance in the Postbellum Era
CHAPTER 20 Commerce at Home and Abroad

PART 4 War, Depression, and War Again: 1914–1946

CHAPTER 21 World War I, 1914–1918
CHAPTER 22 The Roaring Twenties
CHAPTER 23 The Great Depression
CHAPTER 24 The New Deal
CHAPTER 25 World War II
PART 5  The Postwar Era: 1946 to the Present

CHAPTER 26  The Changing Role of the Federal Government

CHAPTER 27  Monetary Policy, Fiscal Policy, and the Business Cycle after World War II

CHAPTER 28  Manufacturing, Productivity, and Labor

CHAPTER 29  Achievements of the Past, Challenges for the Future

Subject Index

Name Index
# Contents

**PREFACE** ........................................................................................................... ix

**CHAPTER 1**  
Growth, Welfare, and the American Economy ............................................ 1  
Americans 1900–2009  1  
A Study with a Purpose  6  
Nation Building  6  
Policy Analysis for Better Choices  9  
Critical Skills for Personal Development  10  
The Long Road out of Poverty  11  
An Institutional Road Map to Plenty  15

**PART 1**  The Colonial Era: 1607–1776

**CHAPTER 2**  
Founding the Colonies ................................................................................. 22  
European Background to the Voyages of Discovery  22  
European Roots and Expanding Empires  22  
Portugal and the First Discoveries  23  
Portugal and Spain: Expanding Empires  24  
The Latecomers: Holland, France, and England  26  
First British Settlements in North America  27  
Perilous Beginnings  27  
Early Reforms  29  
Bringing in Settlers  30  
Demographic Change  34  
Underpopulation Despite High Rates of Population Growth  34  
Population Growth in British North America  34  
The Racial Profile  36  
Imperial European Rivalries in North America  39

**CHAPTER 3**  
Colonial Economic Activities ...................................................................... 42  
Land and Natural Resource Abundance, Labor Scarcity  42  
Agriculture and Regional Specializations  44  
The Southern Colonies  45  
The Middle Colonies  47  
New England  48  
The Extractive Industries  49  
Furs, Forests, and Ores  49  
Sea Products  52
The Manufacturing Industries 52
  Household Manufacture and Craftshops 52
  Mills and Yards 53
  Shipbuilding 54

Occupational Groups 56

CHAPTER 4
The Economic Relations of the Colonies ........................................ 58

English Mercantilism and the Colonies 58
  The Early Navigation Acts 59

Exports, Imports, and Markets 60

Overseas Shipping and Trade 61

Intercolonial Commerce 65

Money and Trade 66
  Commodity Money 66
  Coins, Specie, and Paper Money 67

Trade Deficits with England 69
  Interpretations: Money, Debt, and Capital 72

CHAPTER 5
Economic Progress and Wealth .................................................. 75

Growth and Change in the Colonial Economy 75
  Productivity Change in Agriculture 76
  Productivity Gains in Transportation and Distribution 80

Technological Change and Productivity 83

Speculations on Early Growth Rates 86

Wealth Holdings 86

Per Capita Wealth and Income, 1774 88

The Distribution of Income and Wealth 88

CHAPTER 6
Three Crises and Revolt ......................................................... 93

The Old Colonial Policy 93

The New Colonial Policy and the First Crisis 96

More Changes and the Second Crisis 98

The Third Crisis and Rebellion 99
  Support in the Countryside 101
  Economic Exploitation Reconsidered 104

PART 2  The Revolutionary, Early National, and Antebellum Eras: 1776–1860

CHAPTER 7
Hard Realities for a New Nation .............................................. 110

The War and the Economy 110

The Constitution 113

American Independence and Economic Change 115
CHAPTER 11
Labor during the Early Industrial Period .................................................. 183
The Growth of the Population and the Labor Force 183
The Changing Labor Force Distribution and Composition 184
   Factories and Workers 185
   The Rhode Island and Waltham Systems 186
The Impact of Immigration 188
The Wages of Male Labor in Manufacturing 189
   English–American Wage Gaps 191
   Skilled–Unskilled Wage Ratios 192
Growing Inequality of Income 192
The Early Union Movement 195
   Legal Setbacks and Gains 195
   Organizational Gains 196
Political Gains for Common Working People 197
   Suffrage 197
   Public Education 198
   Debts, Military Service, and Jail 198
   The 10-Hour Day 198

CHAPTER 12
Money and Banking in the Developing Economy ...................................... 201
The American Monetary Unit 201
The Bimetallic Standard 202
Bank Notes as Paper Money 204
The First Bank of the United States 205
The Second Bank of the United States 208
Economic Fluctuations and the Second Bank 212
Experiments in State Banking Controls 215
   The Suffolk System and the Safety Fund 215
   Free Banking 216
   The Forstall System 216
The Economic Consequences of the Gold Rush 217

CHAPTER 13
The Entrenchment of Slavery and Regional Conflict ................................. 219
African Slavery in the Western Hemisphere 219
First U.S. Constraints on Slavery 220
   Northern Emancipation at Bargain Prices 222
   The Persistence of Southern Slavery 223
Plantation Efficiency 224
Economic Exploitation 231
Economic Entrenchment and Regional Incomes 232
Political Compromises and Regional Conflict 234
## CHAPTER 17
Industrial Expansion and Concentration ............................................... 298

- Structural Change and Industry Composition 298
- New Technologies 300
- New Forms and Sources of Energy 304
- Mass Production 306
- Economies of Scale and Industry Concentration 307
- Early Business Combinations 307
- Trusts and Holding Companies 308

- The Two Phases of the Concentration Movement 309
  - Phase 1: Horizontal Mergers (1879–1893) 309
  - Phase 2: The Vertical Mergers (1898–1904) 312

- The Sherman Antitrust Act 314
  - The Supreme Court as Trustbuster 316
  - The Federal Trade Commission 317

## CHAPTER 18
The Emergence of America’s Labor Consciousness ............................... 319

- Demographic Change and the Supply of Labor 319
  - Birth and Death Rates 319
  - Immigration 321

- Immigration: Politics and Economics 322
  - Foreign Workers and American Labor 323

- Gains for Workers in the Postbellum Period 324
  - Hours and Wages 324
  - Women 328
  - Children 329

- Unions, Employers, and Conflict, 1860–1914 330
  - The Unions and the Courts 334

- Labor’s Gains and the Unions 335

## CHAPTER 19
Money, Prices, and Finance in the Postbellum Era .............................. 338

- New Forms of Currency 339
  - A Dual Banking System 340

- Gold, Greenbacks, or Bimetallism? 343
  - Returning to the Gold Standard after the Civil War 343
  - The Crime of ’73 347
  - The Commitment to the Gold Standard 349
  - The International Gold Standard 351

- The Rise of Investment Banking 352

- Bank Panics and the Establishment of the Federal Reserve System 354
  - National Monetary Commission 355
  - Federal Reserve Act 355

## CHAPTER 20
Commerce at Home and Abroad ......................................................... 358

- Urbanization 358
- Marketing and Selling 359
  - Wholesaling 359
  - Retailing 362
Product Differentiation and Advertising 363
The First Steps toward Consumer Protection 366
Foreign Trade 368
   Changing Composition of Exports and Imports 369
   Changes in Balance of Trade 370
The Acceptance of Protectionist Doctrines 371
The Income Tax 373
The United States in an Imperialist World 374

PART 4  War, Depression, and War Again: 1914–1946

CHAPTER 21
World War I, 1914–1918 .................................................... 380
   The Origins of the War 380
   The United States goes to War 381
      Financing the War 382
   Replacement of the Market with a Command System 384
      The War Industries Board 385
      The Food and Fuel Administrations 385
   Labor during the War 387
   The Costs of the War 390
   The Legacies of the War 390
      The Postwar Recession 390
      The Domestic Legacies 391
      The International Legacies: The Treaty of Versailles 392

CHAPTER 22
The Roaring Twenties ....................................................... 394
   Social Changes in the Aftermath of War 394
   New Goods and the Rise of the Middle Class 395
      The Automobile 396
      Buy Now, Pay Later 397
      Prohibition 399
   The Labor Force in the Twenties 400
      The Paycheck Rises 400
      The Unions Decline 400
      Immigration Is Restricted 402
      America Goes to High School 403
   On the Land 404
      Economic Distress in Agriculture 404
      First Steps toward Farm Subsidies 405
   Were the Rich Getting Richer while the Poor Got Poorer? 407
   Macroeconomic Policies 407
      Fiscal Policy 407
      Monetary Policy 408
   International Developments 410
   The Great Bull Market 411
      The Ponzi Scheme 411
      The Florida Land Boom 411
CHAPTER 23
The Great Depression ....................................................... 418
Dimensions of the Depression 418
Causes of the Great Depression 420
The Stock Market Crash 420
The Banking Crises 424
The Smoot-Hawley Tariff 426
The Role of the Financial Crisis 426
Monetary Effects of the Financial Crises 426
Nonmonetary Effects of the Financial Crisis 428
Why Didn’t the Federal Reserve Save the Banking System? 429
Fiscal Policy in the 1930s 431
Partial Recovery and then a New Downturn 432
The Price of Gold and the Stock of Money 432
Climbing Out of the Abyss 433
The Recession within the Depression 434
Why Did the Depression Last So Long? 434
Perverse Effects of the New Deal? 435
Fiscal and Monetary Policy 435
Can It Happen Again? 436
What Does the Depression Tell Us about Capitalism? 437

CHAPTER 24
The New Deal .............................................................. 440
The First New Deal 440
Relief 440
Recovery 444
Reform of the Financial System 445
A Safety Net for the Banking System 445
Increased Regulation of Securities Markets 446
The End of America’s Commitment to the Gold Standard 446
Centralization of Monetary Power in the Federal Reserve Board 446
Reform of the Agricultural Sector 447
Labor and the New Deal 452
A New Institutional Framework for Labor Markets 452
Why Was Unemployment So High for So Long? 454
The Supreme Court and the New Deal 456
The Second New Deal: The Welfare State 456
The Critics of the New Deal 457
The Legacy of the New Deal 459

CHAPTER 25
World War II ................................................................. 462
Mobilizing for War 462
Trade-offs 465
Overwhelming Firepower 466
# Fiscal and Monetary Policy

Wage and Price Controls 470
  * Hidden Price Increases and the Black Market 471
  * Rationing 472

Wartime Prosperity? 473

Labor during the War 474

Wartime Minority Experiences 476
  * Rosie the Riveter 476
  * African Americans 477

Agriculture during the War 479

Demobilization and Reconversion 480
  * Would the Depression Return? 480
  * The GI Bill of Rights 480
  * Birth of the Consumer Society 481

## PART 5 The Postwar Era: 1946 to the Present

### CHAPTER 26 The Changing Role of the Federal Government 486

The Size of Government in the Postwar Era 486
  * Total Federal Spending 486
  * Federal Purchases of Goods and Services 486
  * Federal Employment 489
  * Winners in the Federal Budget 489

  * The “Little New Deal” 491
  * The New Regulation 493

  * Deregulation 495
  * Reaganomics 495

The Cold (and Sometimes Hot) War Against Communism 496

Agriculture 498
  * The Relative Decline of Agriculture 498
  * Price Supports and Subsidies 500

The Environment 503
  * The Conservation Movement 503
  * The Rise of the Environmental Movement 504

Changing Ideological Tides 506

Wagner’s Law 507

### CHAPTER 27 Monetary Policy, Fiscal Policy, and the Business Cycle after World War II 510

The Keynesian Era 510
  * The Korean War and the Treasury-Fed Accord 513
  * Dwight D. Eisenhower: The Conservative Approach to the Business Cycle 514
  * John F. Kennedy and Lyndon Johnson: The New Economics 515
  * Richard M. Nixon: Price Controls and the End of Bretton Woods 516
  * Jimmy Carter: The Great Inflation Reaches a Climax 519

Was the Economy More Stable During the Keynesian Era than before the Depression? 522
The Monetarist Era 523
  A Monetarist Experiment? 523
  Ronald Reagan: Supply-Side Economics 526
  From Greenspan to Bernanke at the Federal Reserve 528

CHAPTER 28
Manufacturing, Productivity, and Labor ........................................ 533
Gales of Creative Destruction 533
  Productivity Growth 537
  The Energy Crisis 538
Changes in the Organization of Industry 540
  Conglomerate Mergers 540
  Hostile Takeovers 541
  In Search of Economies of Scale and Scope 542
Antitrust Policy 542
The Rise of the Service Sector 543
The Changing Role of Women in the Labor Force 544
  The Gender Gap 546
  The Baby Boom 546
Minorities 547
  African Americans 548
  Native Americans 551
The New Immigration 552
Unions 554
Real Wages 555

CHAPTER 29
Achievements of the Past, Challenges for the Future ....................... 559
Achievements of the Past 559
  Real Incomes Have Grown Rapidly 559
  Lagging Regions Have Caught Up 561
  Biomedical Measures of Well-Being Show Improvement 562
  Education Levels Reached by Americans Have Increased Steadily 566
Challenges for the Future 567
  Improving the Distribution of Income 567
  Caring for an Aging Population 569
  Winning the Race between Technology and Education 570
  The Search for a Meaningful Life 570
Prophets of Decline 571

Subject Index .................................................................................. 575
Name Index ..................................................................................... 593
Preface

This new edition of History of the American Economy was deemed necessary because of the brisk advance of research in economic history and the rapid changes unfolding in the U.S. and global economies. The struggle of many nations to convert from centrally planned to market-led economies after the collapse of communism, the rapid economic expansion of India and China, and the growing economic integration in Europe invite new perspectives on the historical record of the American economy. Moreover, the terrorist attacks of September 11, 2001, on the World Trade Center and the Pentagon and the subsequent wars in Afghanistan and Iraq have spread a blanket of uncertainty on the future of the United States. The importance of understanding the sources of economic growth and change, the main subject of this book, is greater than ever.

To properly convey the speed of change of American lifestyles and economic well being, chapter 1 begins with a focus on twentieth-century American life, mostly but not entirely economic. The purpose is to show how dramatically different the way we live today is compared with the times of our grandparents and great-grandparents. The remarkable contrasts in living standards, length of life, and how we work and consume from 1900 to 2000 provide a “wake-up call” for the nation on the changes soon to unfold in our lives and in the lives of generations to come. This wake-up call serves a vital purpose: preparation for the future. As Professor Deirdre McCloskey admonishes us in her book Second Thoughts, in preparing for the future we best arm ourselves with a good understanding of the past.

Boxed discussions called “New Views” draw explicit analogies between current issues and past experiences—drug prohibition today and alcohol prohibition in the 1920s, and war finance today and war finance in the past, to name two. Economic historians, of course, have always made these connections for their students, but we believe that by drawing attention to them in the text, we reinforce the lesson that history has much to teach us about the present, and the perhaps equally important lesson that detailed study of the past is needed to determine both the relevance and the limitations of historical analogies.

We have retained the presentation of material in chronological order, albeit not rigidly. Part One, “The Colonial Era: 1607–1776,” focuses on the legacies of that era and the institutions, policies, economic activities, and growth that brought the colonies to a point at which they could challenge the mother country for their independence. Part Two, “The Revolutionary, Early National, and Antebellum Eras: 1776–1860,” and Part Three, “The Reunification Era: 1860–1920,” each begin with a chapter on the impact of war and its aftermath. The other chapters in these parts follow a parallel sequence of discussion topics—land, agriculture, and natural resources; transportation; product markets and structural change; conditions of labor; and money, banking, and economic fluctuations. Each of these parts, as well as Part Four, “War, Depression, and War Again: 1914–1946,” closes with a chapter on an issue of special importance to the period: Part One, the causes of the American Revolution; Part Two, slavery; and Part Three, domestic markets and foreign trade. Part Four closes with a discussion of World War II. All the chapters have been rewritten to improve the exposition and to incorporate the latest findings. Part Five, “The Postwar Era: 1946 to the Present” moreover, has been extensively revised to reflect the greater clarity with which we can now view the key developments that shaped postwar America.
Throughout the text, the primary subject is economic growth, with an emphasis on institutions and institutional changes, especially markets and the role of government, including monetary and fiscal policy. Three additional themes round out the foundation of the book: the quest for security, international exchange (in goods, services, and people), and demographic forces.

Finally, this edition further develops the pedagogical features used in earlier editions. We provide five basic rules of analysis called “economic reasoning propositions,” in Chapter 1. We repeatedly draw attention in the text to these propositions with explicit text references and a marginal icon for easy reference. A list of historical and economic perspectives precedes each of the five parts of the book, providing a summary of the key characteristics and events that gave distinction to each era. Furthermore, each chapter retains a reference list of articles, books, and Web sites that form the basis of the scholarship underlying each chapter. Additional sources and suggested readings are available on the Web site. In addition to these pedagogical aids, each chapter begins with a “Chapter Theme” that provides a brief overview and summary of the key lesson objectives and issues. In addition to the “New Views” boxed feature described above, we have retained the “Economic Insights” boxes that utilize explicit economic analysis to reveal the power of economic analysis in explaining the past and to show economic forces at work on specific issues raised in the chapters. We have also retained the “Perspectives” boxes that discuss policies and events affecting disadvantaged groups.

We are pleased to introduce an improved technology supplement with this edition: Economic Applications (http://www.cengage.com/sso). This site offers dynamic Web features: EconNews Online, EconDebate Online, and EconData Online. Organized by pertinent economic topics, and searchable by topic or feature, these features are easy to integrate into the classroom. EconNews, EconDebate and EconData deepen a student’s understanding of theoretical concepts through hands-on exploration and analysis of the latest economic news stories, policy debates, and data. These features are updated on a regular basis. The Economic Applications Web site is complimentary via an access card included with each new edition of History of the American Economy. Used book buyers can purchase access to the site at http://www.cengage.com/sso.

Acknowledgments

We are especially grateful to the reviewers of this edition: Phil Coelho, Martha L. Olney, David Mitch, Michael R. Haines, Daniel Barbezat, and David Mustard. Farley Grubb, Pamela Nickless, and John Wallis were of special help with ideas for the first half of text. Richard England provided a detailed list of comments on and criticisms of the Tenth Edition that was extremely helpful.

This edition, moreover, reflects the contributions of many other individuals who have helped us with this and previous editions. Here we gratefully acknowledge the contributions of Lee Alston, Terry Anderson, Fred Bateman, Diane Betts, Stuart Bruchey, Colleen Callahan, Ann Carlos, Susan Carter, Phil Coelho, Raymond L. Cohn, James Cypher, Paul A. David, Lance Davis, William Dougherty, Richard A. Easterlin, Barry Eichengreen, Stanley Engerman, Dennis Farnsworth, Price Fishback, Robert W. Fogel, Andrew Foshee, Claudia Goldin, Joseph Gowaskie, George Green, Robert Higgs, John A. James, Stewart Lee, Gary D. Libecap, James Mak, Deirdre McCloskey, Russell Menard, Lloyd Mercer, Douglass C. North, Anthony O’Brien, Jeff Owen, Edwin Perkins, Roger L. Ransom, David Rasmussen, Joseph D. Reid Jr., Paul Rhode, Elyce Rotella, Barbara Sands, Don Schaefer, R. L. Sexton, James Shepherd, Mark Siegler, Austin Spencer, Richard H. Steckel, Paul Uselding, Jeffrey Williamson, Richard Winkelman, Gavin Wright, and Mary Yeager. The length of this list (which is by no means complete) reflects the extraordinary enthusiasm and generosity that characterizes the discipline of economic history.

Gary Walton is grateful to the Foundation for Teaching Economics and for the research assistance of Lisa Chang and to his colleagues at the University of California, Davis for advice and encouragement, especially Alan Olmstead, Alan Taylor, Greg Clark, and Peter Lindert.

Hugh Rockoff thanks his colleagues at Rutgers, especially his fellow economic historians Michael Bordo, Carolyn Moehling, and Eugene White. He is greatly indebted to Nuttanan Wichitaksorn for his able research assistance. Hugh owes his largest debt to his wife, Hope Corman, who provided instruction in the subtleties of labor economics and unflagging encouragement for the whole project. Hugh also owes a special debt to his children, Jessica and Steven, who have now reached an age at which they no longer provide a plausible excuse for not finishing the revision on time.

GARY WALTON
HUGH ROCKOFF
About the Authors

Gary M. Walton became the Founding Dean of the Graduate School of Management at the University of California, Davis in 1981 and is Professor of Economics Emeritus at the University of California, Davis. In addition, he is President of the Foundation for Teaching Economics, where he has designed and administered highly acclaimed economics and leadership programs (domestically and internationally) for high school seniors selected for their leadership potential, as well as for high school teachers.

He credits much of his personal success to his coach at the University of California, Berkeley, the legendary Brutus Hamilton (U.S. Head Coach of Track and Field in the 1952 Olympics), and his success as an economist to his doctoral dissertation advisor, Douglass C. North (1993 Nobel Laureate in Economics).

Hugh Rockoff is Professor of Economics at Rutgers University and a research associate of the National Bureau of Economic Research. He has written extensively on banking and monetary history and wartime price controls. He enjoys teaching economic history to undergraduates, and credits his success as an economist to his doctoral dissertation advisor, Robert W. Fogel (1993 Nobel Laureate in Economics).
CHAPTER 1

Growth, Welfare, and the American Economy

AMERICANS 1900–2000

When Rutgers and Princeton played the first intercollegiate football game in 1869, it is doubtful any person alive could have foreseen the impact football would have on twenty-first-century American life. From the weekly money and passion fans pour into their favorite teams, to the media hype and parties linked to season-ending bowl games, football is truly big business, both in college and in the pros. And how the game has changed!

By the turn of the twentieth century, some of the land grant colleges of the Midwest were also fielding teams, one of the earliest being the University of Wisconsin–Madison. The Badgers, as they are popularly called today, enjoy a long-standing sports tradition, and thereby provide some historically interesting facts. As shown in Figure 1.1 on page 2, in 1902, UW’s football team was made up of players whose average size was 173 pounds. Most of the athletes played “both sides of the ball,” on offense as well as defense, and substitutions were infrequent. Economists today would say they were short on specialization. By 1929, the average size had increased modestly to 188 pounds, and players were increasingly, though not yet exclusively, specializing on offense or defense. By 2008, the average weight of Wisconsin football players was 238 pounds, and players routinely specialized not just on defense or offense, but by particular positions and by special teams, and sometimes by types of formations. Even more dramatic size changes are revealed by comparing the weight of the five largest players. UW’s five biggest players in 1902 averaged 184 pounds, hardly more than the average weight of the whole team. As shown in Figure 1.2 on page 2, in 1929 the five biggest players averaged 199 pounds. By 2008, the five largest offensive players averaged 315 pounds, just shy of a sixty percent jump over 1929.

UW alumni and students have also been big-time basketball enthusiasts, favoring players with speed, shooting and jumping skills, and height. In 1939, the Badgers starting five had a considerable range of heights by position just as they do today. Figure 1.3 on page 3 conveys not only the consistent differences among guards, forwards, and centers but also the dramatic gains in height by players at every position taking the court today. The 2008 guards had an average height equal to the heights of the 1939 guards. Such dramatic height gains are partly a result of the growing college entrance opportunities that exceptionally talented players enjoy today compared with young players long ago. But the height gains also reflect more general increases in average heights for the U.S. population overall, and these gains in turn indicate improvements in diet and health.

Changes in average height tell us quite a lot about a society; nations whose people are becoming taller, as they have in Japan over the last 50 years, are becoming richer and eating better. Because of genetic differences among individuals, an individual woman who is short cannot be considered to be poor. Such a conclusion would not be
unreasonable, however, especially along with other evidence, for a society of short people. Adult heights reflect the accumulative past nutritional experience during the growing years, the disease environment, health care, as well as genetic factors (which change very slowly). Americans are the heaviest people in the world; the Germans are second. Dutchmen are the world’s tallest, with male adults averaging 6 feet 1 inches. Americans today, with adult males averaging 5 feet 10 inches and 172 pounds, are nearly 2 inches taller than their grandparents. The average height gain of Americans during the twentieth century was a little more than 3 inches. We are richer and eat more and better than Americans did 100 years ago, sometimes to excess, with a third of the population currently measured as obese or overweight.

Another, and arguably even better measure of a society’s vitality and well-being is the length of life of its citizens. Throughout most of history, individuals and societies have fought against early death. The gain in life expectancy at birth from the low 20s to nearly 30 by around 1750 took thousands of years. Since then, life expectancy in advanced countries has jumped to 75, or 150 percent, and in 2002 in the United States it was 79 years. This phenomenal change is not merely a reflection of decline in infant

[FIG-01-01]
University of Wisconsin
Starting Football Players’
Average Weight

[FIG-01-02]
University of Wisconsin
Football: Average
Weight of Five Largest
Players

Source: Sport Information Office, University of Wisconsin–Madison.
mortality; as Table 1.1 on page 4 shows for the United States, the advances in length of life are spread across all age groups. As a consequence, in 2007, 302 million people were living in the United States, up from 76 million in 1900.

The gains in population size and in length of life stem primarily from economic growth, because such growth leads to better diets and cleaner water, to sewage disposal, and other health-enhancing changes. The broadest and most commonly used measures of overall economic performance are the levels and the rise in real gross domestic product (GDP). The U.S. real GDP increased from $0.5 trillion in 1900 to more than $11.5 trillion in 2007, measured in constant real purchasing power of 2000 dollars. From Figure 1.4 on page 4, we see that when divided by the population, GDP per capita averaged $4,900 (in 2000 constant dollars) in 1900. In 2007 it was $38,000, almost eight times higher. Average yearly increases of 2 percent, which for any given year appear small, have compounded year after year to realize this sevenfold advance. These gains have not been exclusive to the few, the middle class, or the very rich.

![University of Wisconsin Basketball Players’ Heights](image)

Source: Sport Information Office, University of Wisconsin-Madison.

### TABLE-01-01 LIFE EXPECTANCY BY AGE IN THE UNITED STATES

<table>
<thead>
<tr>
<th>AGE</th>
<th>1901</th>
<th>1954</th>
<th>2000</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>49</td>
<td>70</td>
<td>77</td>
<td>77.8</td>
</tr>
<tr>
<td>15</td>
<td>62</td>
<td>72</td>
<td>78</td>
<td>78.6</td>
</tr>
<tr>
<td>45</td>
<td>70</td>
<td>74</td>
<td>79</td>
<td>80.3</td>
</tr>
<tr>
<td>65</td>
<td>77</td>
<td>79</td>
<td>83</td>
<td>83.7</td>
</tr>
<tr>
<td>75</td>
<td>82</td>
<td>84</td>
<td>86</td>
<td>86.9</td>
</tr>
</tbody>
</table>

Sources: Data for 1901, U.S. Department of Commerce 1921, 52–53; and data for 1940–1996, National Center for Health Statistics, selected years.
The rise in material affluence in the United States in this century has been so great that citizens whom the government labels “officially poor” currently have incomes surpassing those of average middle-class Americans in 1950 and higher than all but the richest Americans (top 5 percent) in 1900. The official poverty income level in the United States is based on the concept of meeting basic needs. The measure starts with a minimum amount of money needed to feed a person properly. This amount is then multiplied by three to meet needs for shelter, clothing, and other essentials. This widely used poverty threshold measure for Americans was about $8,500 at the end of the century, almost exactly one-quarter the income of the average American, but higher than average incomes for most of the rest of the world, and above the world average per capita income.

Despite gains for people labeled “poor” in the United States, the gap between the rich and the poor remains wide. This gap is an important element in drawing conclusions about the success or failure of an economic system. It bears on the cohesion, welfare, and security of a society. A useful starting point from which to consider this issue is to view a snapshot of the division of income in the United States. Figure 1.5 shows this distribution in fifths for all U.S. households for 2007. As in other years, a large gap existed between the top fifth and the bottom fifth. In fact, the richest fifth of the population received half the income (49.7 percent), about the amount the remaining four-fifths received. The poorest fifth U.S. households received only 3.4 percent of total income in 2007 (not including food stamps, assisted housing, Medicaid, and other such assistance). Figure 1.6 shows changes in average real income received by these five groups since 1966. By the end of the century, the top fifth of the households earned incomes averaging more than 13 times the average incomes of those in the bottom fifth.

In Figure 1.6, the income gap appears to have grown in recent years: The two top lines drift upward, while the lower three remain level. In percentage terms, for example, for 1975 the lowest fifth received 4.2 percent of total income; as noted, in 2001 it was...
down to 3.5 percent. In 1975 the top group received 43.7 percent but claimed 50.1 percent of the total in 2001.

The question begging, however, is whether the people in the bottom fifth in 1975 were also in that category in 2001? If all of the people in the top category in 1975 had switched places by 2001 with all the people in the bottom category (the bottom fifth rising to the top fifth by 2001), no change would be observed in the data shown in Figures 1.5 and 1.6. Surely such a switch would be considered a huge change in the distribution of income among people.

The best available data on the movement of people in these classifications come from a study undertaken by the University of Michigan Panel Survey on Income Dynamics covering 1975–1991. The conventional view of widening income disparity suggested by Figures 1.5 and 1.6 stands in sharp contrast to the evidence in Table 1.2. Reading along the bottom line, we find only 5.1 percent of those in the bottom quintile in 1975 were there in 1991; 29 percent had moved into the top fifth. Reading along the top line

FIG-01-05
The American Income Pie by Fifths, 2007


FIG-01-06

indicates that 0.9 percent of those in the top fifth in 1975 had fallen into the bottom fifth by 1991; 62.5 percent remained in the top category.

Further analysis of the data has shown that the rise in income and upward movement into higher categories were frequently swift. In any given year, many of those identified in the bottom fifth were young and in school. With gains in education and job opportunities, many advanced readily into higher rankings.

Another perspective on the economic gains that Americans experienced during the twentieth century comes from looking at the availability, ownership, and use of new goods. Figure 1.7 shows a virtual explosion in the array of goods routinely owned and

<table>
<thead>
<tr>
<th>INCOME QUINTILE IN 1975</th>
<th>PERCENTAGE IN EACH QUINTILE IN 1991</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
</tr>
<tr>
<td>5th (highest)</td>
<td>0.9</td>
</tr>
<tr>
<td>4th</td>
<td>1.9</td>
</tr>
<tr>
<td>3rd (middle)</td>
<td>3.3</td>
</tr>
<tr>
<td>2nd</td>
<td>4.2</td>
</tr>
<tr>
<td>1st (lowest)</td>
<td>5.1</td>
</tr>
</tbody>
</table>

In 1991, only 5.1 percent who were in the lowest income quintile in 1975 were still there. Of the lowest quintile in 1975, 29 percent had progressed to the top one-fifth by 1991.

Source: Cox and Alm 1995.
used in U.S. homes. Most of the items shown were not even available to the richest Americans alive in 1901.

A STUDY WITH A PURPOSE

Nation Building

Why should you study economic history? The best short answer is to better prepare you for the future. Economic history provides you with a clear perspective on the forces of change and a good understanding of the lessons of the past. The study of economic history also provides lessons on nation building and ways to analyze policies and institutions that affect the nation as well as you personally.

One hundred years ago, citizens of Great Britain enjoyed the highest standards of living in the world, and the British Empire was the leading world power. In 1892, the dominant European powers upgraded the ranks of their diplomats in Washington, D.C., from minister to ambassador, thereby elevating the United States to first-division status among nations. On economic grounds, this upgrading should have occurred much earlier, because in 1892, output per capita in the United States was much higher than in France and Germany and not far below that in Great Britain.

In 1950, the United States was the most powerful nation in the world, and Americans enjoyed standards of living higher, by far, than those of any other people. Another “super power,” however, was intensely challenging this supremacy. As the cold war unfolded and intensified after World War II, nations became divided into two clusters: communist nations emphasizing command, control, and central planning systems, and free nations emphasizing markets, trade, competition, and limited government. This division into clusters was especially apparent in Europe and Asia, and many other nations sat on the sidelines pondering their futures and which system to follow. By all appearances, the Soviet Union displayed levels of economic, technological, and military strength, rivaling those of the United States. It launched its space satellite, called Sputnik, in 1957, placing the first vehicle constructed on Earth in space. The cold war ended in 1989, and many satellite nations of the Soviet Union (e.g., Eastern Germany, the former Czechoslovakia, etc.) broke free. By the mid-1990s, the Russian Federation desperately needed aid just to feed its people. The life expectancy of men in Russia plummeted from the low 60s (mid-1980s) to 56 (mid-1990s). The economic and political collapse of the Soviet Union and the overwhelming relative success of market-driven systems provide another example of the importance of studying economic history.

Such swings in international power, status, and relative well-being are sobering reminders that the present is forever changing and slipping into the past. Are the changes that all of us will see and experience in our lifetimes inevitable, or can destinies be steered? How did we get where we are today?

It is unfortunate that history is often presented in forms that seem irrelevant to our everyday lives. Merely memorizing and recalling dates and places, generals and wars, presidents and legislative acts misdirects our attention to what happened to whom (and when) rather than the more useful focus on how and why events happened. One of the special virtues of the study of economic history is its focus on how and why. It provides us a deeper understanding of how we developed as a nation, how different segments of the population have fared, and what principal policies or compelling forces brought about differential progress (or regress) among regions and people. In short, the study of
economic history enriches our intellectual development and provides an essential perspective on contemporary affairs. It also offers practical analytical guidance on matters of policy. The study of economic history is best suited for those who care about the next 1 to 1,000 years and who want to make the future better than the past.

This is no empty claim. Surely one of the primary reasons students major in economics or American history is to ultimately enhance the operation and performance of the American economy and to gain personally. Certainly instructors hope their students will be better-informed citizens and more productive businesspeople, politicians, and professionals. "If this is so," as Gavin Wright recently properly chastised his economic colleagues,

if the whole operation has something to do with improving the performance of the U.S. economy, then it is perfectly scandalous that the majority of economics students complete their studies with no knowledge whatsoever about how the United States became the leading economy in the world, as of the first half of the twentieth century. What sort of doctor would diagnose and prescribe without taking a medical history? (1986, 81)

Too often, students are victims of economics textbooks that convey no information on the rise and development of the U.S. economy. Rather, textbooks convey the status quo of American preeminence as if it just happened, as if there were no puzzle to it, as if growth were more or less an automatic, year-by-year, self-sustained process. Authors of such textbooks need an eye-opening sabbatical in Greece, Russia, or Zimbabwe.

Economic history is a longitudinal study but not so long and slow as, say, geology, in which only imperceptible changes occur in one's lifetime. In contrast, the pace of modern economic change is fast and accelerating in many dimensions. Within living memory of most Americans, nations have risen from minor economic significance to world prominence (Hong Kong, China; Japan; the Republic of Korea) while others have fallen from first-position powers to stagnation (Russia in the 1990s and Argentina after 2002). Whole new systems of international economic trade and payments have been developed (the North American Free Trade Agreement, European Union). New institutions, regulations, and laws (1990 Clean Air Act, 1996 Welfare Reform Act) have swiftly emerged; these sometimes expand and sometimes constrain our range of economic choices.

The role of government in the economy is vastly different from what it was only 60 or 70 years ago; undoubtedly, it will be strikingly different 50 years from now. The study of economic history stresses the role of institutional change, how certain groups brought about economic change, and why. The study of history, then, is more than an activity to amuse us or sharpen our wits. History is a vast body of information essential to making public policy decisions. Indeed, history is the testing grounds for the economic theory and principles taught in economics classes, as well as for the theories taught in other subjects.

To simplify the vast range of economic theory, we rely primarily on five Economic Reasoning Propositions, as given in Economic Insight 1.1. These Economic Reasoning Propositions can be summarized for referral purposes throughout the text, as follows:

1. Choices matter.
2. Costs matter.
3. Incentives matter.
4. Institutions matter.
5. Evidence matters.
ECONOMIC INSIGHT 1.1

FIVE PROPOSITIONS FOR ECONOMIC REASONING

As John M. Keynes has said,

“Economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking which helps its possessor to draw correct conclusions.

This “apparatus of the mind,” or economic way of thinking, follows logically from five basic propositions of human nature and well-accepted truths.

1. People choose, and individual choices are the source of social outcomes. Scarcity compels us to compete in some form and it necessitates choice. People make choices based on their perceptions of the expected costs and benefits of alternatives. Choices involve risk; outcomes cannot be guaranteed because the consequences of choices lie in the future.

2. Choices impose costs. People incur costs when making decisions. Choices involve trade-offs among alternatives. People weigh marginal gains against marginal sacrifices. Ultimately, the cost of any decision is the next-best alternative that must be forgone. Reasoned decision making leads to an increase in any activity in which expected benefits exceed expected costs, and a decrease in any activity in which expected costs exceed expected benefits.

3. Incentives matter. Incentives are rewards that encourage people to act. Disincentives discourage actions. People respond to incentives in predictable ways; when incentives change, behavior changes in predictable ways.

4. Institutions matter, and the “rules of the game” influence choices. Laws, customs, moral principles, ideas, and cultural institutions influence individual choices and shape the economic system.

5. Understanding based on knowledge and evidence imparts value to opinions. The value of an opinion is determined by the knowledge and evidence on which it is based. Statements of opinion should initiate the quest for economic understanding, not end it.

Next time you are in a discussion or argument, recall Economic Reasoning Proposition 5. Evidence comes from history and tests the soundness of an opinion. An opinion is a good way to start a discussion, but it should not end one.

As Economic Reasoning Proposition 5 (evidence matters) emphasizes, not all opinions are equal, not when we want to understand how and why things happen. Two of the great advantages of economic history are its quantitative features and use of economic theory to give useful organization to historical facts. In combination, use of theory and evidence enhances our ability to test (refute or support) particular propositions and recommendations. This helps us choose among opinions that differ.

Policy Analysis for Better Choices

Consider, for instance, the run up of prices in early 2008, especially in gas and oil and food stuffs; additionally, prices on an average basket of goods purchased increased by nearly 4 percent in the United States and by 5.5 percent for the global economy. Such rates harken back to the 1970s. How could we assess a recommendation for mandatory wage and price controls as a means to combat inflation? Figure 1.8 traces a decade of inflation and reveals our experience with wage and price controls during the Nixon years. President Nixon’s opinion at the time was that the controls would benefit the economy.

As shown in Figure 1.8, Nixon’s controls (a choice made within his administration) were imposed in August 1971, when the inflation rate was 3.5 percent. The precontrol peak rate of inflation was 6 percent in early 1970 and was actually falling at the time...
controls were imposed. The rate of inflation continued to drift downward and remained around 3 percent throughout 1972; it started to rise in 1973, and by the time the controls were completely lifted in early 1974, the rate was 10 percent and rising.

On the face of it, controls did little to stop inflation. But what explains this dismal record? Were the controls themselves to blame, or were other factors responsible? Only a careful study of the period can identify the role of controls in the acceleration of inflation. A contrast between Nixon’s price controls and those imposed during the Korean War (which were not followed by a price explosion after controls were lifted) suggests two important things to look at: monetary and fiscal policies.

Price controls, moreover, disrupted the smooth functioning of the economic system. For example, to circumvent the Nixon controls, the U.S. lumber industry regularly exported lumber to Canada and then reimported it for sale at higher prices. (Refer to Economic Reasoning Proposition 4: institutions (rules) matter.) As fertilizers and chemical pesticides became more profitable to sell abroad than at home, agricultural production suffered for want of these essential inputs. (Recall Economic Reasoning Proposition 3: incentives matter.) These and many other similar disruptions to production decreased the growth rate of goods and services and, therefore, the inflation was worse than it otherwise would have been. We cannot explore this issue in depth here. Our point is simply that to evaluate policy proposals, we must inevitably turn to the historical record.¹

The use of wage and price controls during World War II provides another example adding to our understanding of their effectiveness. One important lesson this episode teaches is the need to supplement quantitative studies with historical research. An economist cannot naively assume that price statistics always tell the truth. During the war, controls were evaded in numerous ways that were only partly reflected in the official numbers despite valiant efforts by the Bureau of Labor Statistics. One form of evasion was quality deterioration. Fat was added to hamburger, candy bars were made smaller and had inferior ingredients substituted, coarser fabrics were used in making clothes, maintenance on rental properties was reduced, and so on. Sometimes whole lines of low-markup, low-quality merchandise were eliminated, forcing even poor consumers to trade up to high-markup, high-quality lines or go without any new items. And, of course,

¹An attempt to compare and contrast American experiences with wage and price controls is presented in Rockoff (1984).
black markets developed, just as current ones in controlled substances, such as marijuana, have done. The job of the economic historian is to assess the overall effect of these activities.2

**CRITICAL SKILLS FOR PERSONAL DEVELOPMENT**

Granted that economic history is important to the professional economist or economic policymaker, but is there any practical reason for studying it if a student has other long-term goals? The answer is yes. See Black, Sanders, and Taylor (2003), who show that undergrad economics majors do better financially than do business, math, or physics majors. The skills developed in studying economic history—critically analyzing the economic record, drawing conclusions from it based on economic theory, and writing up the results in clear English—are valuable skills in many lines of everyday work. The attorney who reviews banking statutes to determine the intent of the law, the investment banker who studies past stock market crashes to find clues on how to foretell a possible crash, and the owner-operator of a small business who thinks about what happened to other small businesses that were sold to larger firms are all taking on the role of economic historian. It will help them if they can do it well.3

Besides the importance of historical study for its vital role in deliberating private and public policy recommendations, knowledge of history has other merits. For one thing, history can be fun—especially as we grow older and try to recapture parts of our lives in nostalgic reminiscence. For another, history entertains as well as enriches our self-consciousness, and, often, because of television, the historical account is provided almost instantly (e.g., news coverage of the 2003 war in Iraq). A sense of history is really a sense of participation in high drama—a sense of having a part in the great flow of events that links us with people of earlier times and with those yet to be born.

We conclude this section with the reminder that two of the principal tasks of economic historians are to examine a society’s overall economic growth (or stagnation or decline) and to find out what happens to the welfare of groups within the society as economic change occurs. Our primary purpose in the following pages is to explain how the American economy grew and changed to fit into an evolving world economy. We study the past to better understand the causes of economic change today and to learn how standards of living can be affected by policies and other forces stemming from technological, demographical, and institutional change.4

**The Long Road out of Poverty**

Before diving into the chronology of American economic history emphasizing the forces of economic growth, it is essential to place the present-day circumstances of Americans and others in proper historical perspective. As Winston Churchill is credited with saying, “The longer back you look, the farther into the future you can see” (1956). However, we rarely see the distant past clearly, let alone the future.

Reflecting on some historical episode—perhaps from the Bible, or Shakespeare, or some Hollywood epic—is an interesting exercise. For most of us, the stories we recall are about great people, or great episodes, tales of love, war, religion, and other dramas of the human experience. Kings, heroes, or religious leaders in castles, palaces, or

---

2For one exploration of this issue, see Rockoff (1978).
3For further insights into the gains of studying economic history, see McCloskey (1976).
4For examples of institutional change, see Alston (1994) and Siniecki (1996).
cathedrals—engaging armies in battles, or discovering inventions or new worlds—readily come to mind, often glorifying the past.\(^5\)

To be sure, there were so-called golden ages, as in Ancient Greece and during the Roman Era, the Sung Dynasty (in China), and other periods and places in which small fractions of societies lived in splendor and reasonable comfort, and in which small portions of the population sometimes rose above levels of meager subsistence. But such periods of improvement were never sustained.\(^6\) Taking the long view, and judging the lives of almost all of our distant ancestors, their reality was one of almost utter wretchedness. Except for the fortunate few, humans everywhere lived in abysmal squalor. To capture the magnitude of this deprivation and sheer length of the road out of poverty, consider this time capsule summary of human’s history from Douglass C. North’s 1993 Nobel address:

> Let us represent the human experience to date as a 24-hour clock in which the beginning consists of the time (apparently in Africa between 4 and 5 million years ago) when humans became separate from other primates. Then the beginning of so-called civilization occurs with the development of agriculture and permanent settlement in about 8000 B.C. in the Fertile Crescent—in the last 3 of 4 minutes of the clock (emphasis added). For the other 23 hours and 56 or 57 minutes, humans remained hunters and gatherers, and while population grew, it did so at a very slow pace. Now if we make a new 24-hour clock for the time of civilization—the 10,000 years from development of agriculture to the present—the pace of change appears to be very slow for the first 12 hours....Historical demographers speculate that the rate of population growth may have doubled as compared to the previous era but still was very slow. The pace of change accelerates in the past 5,000 years with the rise and then decline of economies and civilization. Population may have grown from about 300 million at the time of Christ to about 800 million by 1750—a substantial acceleration as compared to earlier rates of growth. The last 250 years—just 35 minutes on our new 24-hour clock (emphasis added)—are the era of modern economic growth, accompanied by a population explosion that now puts world population in excess of 6.8 billion (2008). If we focus on the last 250 years, we see that growth was largely restricted to Western Europe and the overseas extensions of Britain for 200 of those 250 years. (North 1994, 364–365)

Evidence supporting North’s observation that 1750 was a major turning point in the human existence is provided in Figure 1.9.

This graph of the world population over the past 11,000 years, along with noteworthy inventions, discoveries, and events, conveys its literal explosion in the mid-eighteenth century. Just a few decades before the United States won its independence from Britain, the geographic line bolts upward like a rocket, powering past 6 billion humans alive. The advances in food production from new technologies, commonly labeled the second Agricultural Revolution, and from the utilization of new resources (e.g., land in the New World) coincide with this population explosion. Also noteworthy is the intense acceleration in the pace of change in vital discoveries. Before 1600, centuries elapsed between them. Improvements in and the spread of the use of the plow, for example, first introduced in the Mesopotamian Valley around 4000 B.C., changed very little until around 1000 A.D. Contrast this with air travel. The Wright brothers were responsible for the first successful motor-driven flight, in 1903. In 1969, a mere 66 years later, Neil Armstrong

\(^5\)Such glorification has a long tradition: “The humour of blaming the present, and admiring the past, is strongly rooted in human nature, and has an influence even on persons endowed with the profoundest judgment and most extensive learning” from Hume (1777/1987, 464).

\(^6\)For example, see Churchill’s (1956) description of life in Britain during and after the Roman era.
became the first human to step foot on the moon. In short, the speed of life’s changes, which many of us take for granted, has been accelerating, especially in the last two and a half centuries.

Before 1750, chronic hunger, malnutrition, disease, illness, and resulting early death were the norm for almost all people everywhere. Even wealthy people ate poorly; as Nobel Laureate Robert Fogel reports:

*Even the English peerage, with all its wealth, had a diet during the sixteenth and seventeenth centuries that was deleterious to health. Although abundant in calories and proteins, aristocratic diets were deficient in some nutrients and included large quantities of toxic substances, especially alcoholic beverages and salt.* (Fogel 1999)

Exceedingly poor diets and chronic malnutrition were the norm because of the absence of choices, or the fact of scarcity. Food production seldom rose above basic life-sustaining levels. People were caught in a food trap: Meager yields severely limited energy for all kinds of pursuits, including production. Inadequate diets were accompanied by high rates of disease and low rates of resistance to them.

The maladies of malnourishment and widespread disease are revealed in evidence regarding height and weight. As late as 1750, the average height of adult males in England, the world’s most economically advanced nation, was about 5 feet 5 inches, and shorter in France and Norway (Fogel 2004, 13). The average U.S. man today stands 5 inches taller. In the 1750s, typical weight was 130 pounds for an Englishman and 110 pounds for a Frenchman. Compare this with the weight of U.S. males today at about 190 pounds. It
is startling to see the suits of armor in the Tower of London that were worn for ancient wars; they vividly remind us of how small even the supposedly largest people of long-ago really were.

The second Agricultural Revolution, beginning in the mid-eighteenth century, soon followed by the Industrial Revolution (first in England, then France, the United States and other Western countries), initiated and sustained the population explosion, lifting birth rates and lowering death rates. Table 1.3 summarizes research findings on life expectancy at birth for various nations, places, and times. From this and other empirical evidence we find that for the world as a whole, the gain in life expectancy at birth took thousands of years to rise from the low 20s to approximately 30 around 1750 (Preston 1995). Nations of Western Europe led the breakaway from early death and the way out of the malnutrition, poor diet, chronic disease, and low human energy of the past. Data in Table 1.3 for example, indicate that by 1800, life expectancy in France was just 30 years, and in the United Kingdom about 36. By comparison, India’s rate was still under 25 years in the first decade of the twentieth century, and China’s ranged between 25 and 35 two decades later. By 1950, life expectancy in the United Kingdom and France was in the high 60s, while in India and China it was 39 and 41, respectively, comparable to rates in other low-income, developing countries.

In the period before 1750, children and infants, in particular, experienced high death rates globally. At least 20 to 25 percent of babies died before their first birthday. By 1800, infant mortality in France, the United States, and probably England had broken through the 20 percent level, comparable to rates that prevailed in China and India and other low-income, developing nations in 1950. For Europe, the United States, and other advanced economies, this rate is currently below 1 percent, but that rate is 4 percent in China, 6 percent in India, and 9 percent in Africa (Maddison 2007).

To provide another long-term perspective on the escape from poverty, Tables 1.4 and 1.5 provide evidence, albeit inexact, on real income per person, for various periods. Europe led the gradual rise of real income over a 1,000-year period. By 1700, it had risen above the lower level of per capita income it had shared with China (the most advanced empire/region around 1000 A.D.). While the rest of the world slept and remained mostly unchanged economically, Europe continued to advance. By the early 1800s, the United States had pushed ahead of Europe, and by the mid-1900s, U.S. citizens enjoyed incomes well above those of people residing in Europe and many multiples above those of people living elsewhere. One thousand years ago, even just 500 years ago, Europe and the rest of the world lived at levels of income similar to today’s poorest nations: the Democratic Republic of Congo (formerly Zaire), Ethiopia, Tanzania, Myanmar (formerly Burma), and Bangladesh (see Table 1.5).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>30 (1800)</td>
<td>66</td>
<td>74</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>20–30</td>
<td>36 (1799–1803)</td>
<td>69</td>
<td>73</td>
<td>78</td>
</tr>
<tr>
<td>India</td>
<td>25 (1901–1911)</td>
<td>39</td>
<td>53</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>25–35 (1929–1931)</td>
<td>41</td>
<td>65</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>38</td>
<td>48</td>
<td>51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>World</td>
<td>20–30</td>
<td>46</td>
<td>60</td>
<td>67</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Lee and Feng 1999; Wrigley and Schofield 1981; World Resources Institute; and United Nations Development Program 1999.
### Table 1.4 Real Gross Domestic Product Per Capita (1990 Dollars)

<table>
<thead>
<tr>
<th>Area</th>
<th>1000</th>
<th>1500</th>
<th>1700</th>
<th>1820</th>
<th>1952</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>$400</td>
<td>$640</td>
<td>870</td>
<td>$1,130</td>
<td>$4,370</td>
<td>$19,912</td>
</tr>
<tr>
<td>United States</td>
<td>600</td>
<td>1,260</td>
<td>10,650</td>
<td>$29,037</td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>530</td>
<td>530</td>
<td>610</td>
<td>$2,160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>450</td>
<td>600</td>
<td>600</td>
<td>540</td>
<td>$4,609</td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>$1,549</td>
<td></td>
</tr>
<tr>
<td>World</td>
<td>420</td>
<td>550</td>
<td>600</td>
<td>670</td>
<td>2,270</td>
<td>$6,477</td>
</tr>
</tbody>
</table>


### Table 1.5 GDP Per Capita for 56 Countries in 1990 Dollars

<table>
<thead>
<tr>
<th>Country</th>
<th>1820</th>
<th>1870</th>
<th>1900</th>
<th>1913</th>
<th>1950</th>
<th>1973</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Twelve Western European Countries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>$1,295</td>
<td>$1,875</td>
<td>$2,901</td>
<td>$3,488</td>
<td>$3,731</td>
<td>$11,308</td>
<td>$17,160</td>
</tr>
<tr>
<td>Belgium</td>
<td>$1,291</td>
<td>$2,640</td>
<td>$3,652</td>
<td>$4,130</td>
<td>$5,346</td>
<td>$11,905</td>
<td>$17,165</td>
</tr>
<tr>
<td>Denmark</td>
<td>$1,225</td>
<td>$1,927</td>
<td>$2,902</td>
<td>$3,764</td>
<td>$6,683</td>
<td>$13,416</td>
<td>$18,293</td>
</tr>
<tr>
<td>Finland</td>
<td>$759</td>
<td>$1,107</td>
<td>$1,620</td>
<td>$2,050</td>
<td>$4,131</td>
<td>$10,768</td>
<td>$14,646</td>
</tr>
<tr>
<td>France</td>
<td>$1,218</td>
<td>$1,858</td>
<td>$2,849</td>
<td>$3,452</td>
<td>$5,221</td>
<td>$12,940</td>
<td>$17,959</td>
</tr>
<tr>
<td>Germany</td>
<td>$1,112</td>
<td>$1,913</td>
<td>$3,134</td>
<td>$3,833</td>
<td>$4,281</td>
<td>$13,152</td>
<td>$19,351</td>
</tr>
<tr>
<td>Italy</td>
<td>$1,092</td>
<td>$1,467</td>
<td>$1,746</td>
<td>$2,507</td>
<td>$3,425</td>
<td>$10,409</td>
<td>$16,229</td>
</tr>
<tr>
<td>Netherlands</td>
<td>$1,561</td>
<td>$2,640</td>
<td>$3,533</td>
<td>$3,950</td>
<td>$5,850</td>
<td>$12,763</td>
<td>$16,898</td>
</tr>
<tr>
<td>Norway</td>
<td>$1,004</td>
<td>$1,303</td>
<td>$1,762</td>
<td>$2,275</td>
<td>$4,969</td>
<td>$10,229</td>
<td>$17,543</td>
</tr>
<tr>
<td>Sweden</td>
<td>$1,198</td>
<td>$1,664</td>
<td>$2,561</td>
<td>$3,096</td>
<td>$6,738</td>
<td>$13,494</td>
<td>$16,927</td>
</tr>
<tr>
<td>Switzerland</td>
<td>—</td>
<td>$2,172</td>
<td>$3,531</td>
<td>$4,207</td>
<td>$8,939</td>
<td>$17,953</td>
<td>$21,036</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>$1,756</td>
<td>$3,263</td>
<td>$4,593</td>
<td>$5,032</td>
<td>$6,847</td>
<td>$11,992</td>
<td>$15,738</td>
</tr>
<tr>
<td><strong>Four Western Offshoots</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>$1,528</td>
<td>$3,801</td>
<td>$4,299</td>
<td>$5,505</td>
<td>$7,218</td>
<td>$12,485</td>
<td>$16,237</td>
</tr>
<tr>
<td>Canada</td>
<td>$893</td>
<td>$1,620</td>
<td>$2,758</td>
<td>$4,213</td>
<td>$7,047</td>
<td>$13,644</td>
<td>$18,159</td>
</tr>
<tr>
<td>New Zealand</td>
<td>—</td>
<td>$3,115</td>
<td>$4,320</td>
<td>$5,178</td>
<td>$8,495</td>
<td>$12,575</td>
<td>$13,947</td>
</tr>
<tr>
<td>United States</td>
<td>$1,287</td>
<td>$2,457</td>
<td>$4,096</td>
<td>$5,307</td>
<td>$9,573</td>
<td>$16,607</td>
<td>$21,558</td>
</tr>
<tr>
<td><strong>Five South European Countries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$1,621</td>
<td>$1,951</td>
<td>$7,779</td>
<td>$10,314</td>
</tr>
<tr>
<td>Ireland</td>
<td>$954</td>
<td>$1,773</td>
<td>$2,495</td>
<td>$2,733</td>
<td>$3,518</td>
<td>$7,023</td>
<td>$11,711</td>
</tr>
<tr>
<td>Portugal</td>
<td>—</td>
<td>$1,085</td>
<td>$1,408</td>
<td>$1,354</td>
<td>$2,132</td>
<td>$7,568</td>
<td>$11,130</td>
</tr>
<tr>
<td>Spain</td>
<td>$1,063</td>
<td>$1,376</td>
<td>$2,040</td>
<td>$2,255</td>
<td>$2,397</td>
<td>$8,739</td>
<td>$12,498</td>
</tr>
<tr>
<td>Turkey</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$979</td>
<td>$1,299</td>
<td>$2,739</td>
<td>$4,422</td>
</tr>
<tr>
<td><strong>Five East European Countries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulgaria</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$1,498</td>
<td>$1,651</td>
<td>$5,284</td>
<td>$4,054</td>
</tr>
<tr>
<td>Hungary</td>
<td>—</td>
<td>$1,269</td>
<td>$1,682</td>
<td>$2,098</td>
<td>$2,480</td>
<td>$5,596</td>
<td>$5,638</td>
</tr>
<tr>
<td>Poland</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$2,447</td>
<td>$5,334</td>
<td>$4,726</td>
</tr>
<tr>
<td>Romania</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$1,182</td>
<td>$3,477</td>
<td>$2,565</td>
</tr>
<tr>
<td>Russian Federation.</td>
<td>$751</td>
<td>$1,023</td>
<td>$1,218</td>
<td>$1,488</td>
<td>$2,834</td>
<td>$6,058</td>
<td>$4,671</td>
</tr>
</tbody>
</table>

(continued)
An Institutional Road Map to Plenty

From the preceding per capita income estimates, other evidence, and North’s fascinating time capsule summary of human existence, the road out of poverty clearly is new. Few societies have traveled it; Western Europe, the United States, Canada, Australia, and New Zealand (Britain’s offshoots), Japan, Hong Kong (China), Singapore, and a few others. What steps did Western Europe and Britain’s offshoots take to lead humanity along the road to plenty? Why is China, the world’s most populous country (more than seven Latin American countries)

<table>
<thead>
<tr>
<th>Year</th>
<th>Argentina</th>
<th>Brazil</th>
<th>Chile</th>
<th>Colombia</th>
<th>Mexico</th>
<th>Peru</th>
<th>Venezuela, República Bolivariana de</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1870</td>
<td>$1,311</td>
<td>$670</td>
<td>—</td>
<td>—</td>
<td>$760</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1900</td>
<td>$2,756</td>
<td>$740</td>
<td>$1,949</td>
<td>$973</td>
<td>$1,157</td>
<td>$817</td>
<td>$821</td>
</tr>
<tr>
<td>1913</td>
<td>$3,797</td>
<td>$704</td>
<td>$2,635</td>
<td>$1,236</td>
<td>$1,467</td>
<td>$1,037</td>
<td>$1,104</td>
</tr>
<tr>
<td>1950</td>
<td>$4,987</td>
<td>$869</td>
<td>$3,827</td>
<td>$2,089</td>
<td>$2,085</td>
<td>$2,263</td>
<td>$7,424</td>
</tr>
<tr>
<td>1973</td>
<td>$7,970</td>
<td>$1,673</td>
<td>$5,028</td>
<td>$3,539</td>
<td>$4,189</td>
<td>$3,953</td>
<td>$10,717</td>
</tr>
<tr>
<td>2003</td>
<td>$7,616</td>
<td>$3,913</td>
<td>$7,238</td>
<td>$5,025</td>
<td>$5,112</td>
<td>$2,854</td>
<td>$9,163</td>
</tr>
</tbody>
</table>

**ELEVEN ASIAN COUNTRIES**

<table>
<thead>
<tr>
<th>Year</th>
<th>Bangladesh</th>
<th>Myanmar</th>
<th>China</th>
<th>India</th>
<th>Indonesia</th>
<th>Japan</th>
<th>Pakistan</th>
<th>Philippines</th>
<th>Republic of Korea</th>
<th>Taiwan, China</th>
<th>Thailand</th>
<th>Arith. Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1870</td>
<td>$531</td>
<td>—</td>
<td>$523</td>
<td>$531</td>
<td>$614</td>
<td>$704</td>
<td>$531</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$869*</td>
</tr>
<tr>
<td>1900</td>
<td>$581</td>
<td>—</td>
<td>$523</td>
<td>$558</td>
<td>$653</td>
<td>$741</td>
<td>$687</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$755*</td>
</tr>
<tr>
<td>1913</td>
<td>$617</td>
<td>—</td>
<td>$652</td>
<td>$625</td>
<td>$688</td>
<td>$1,334</td>
<td>$729</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$872*</td>
</tr>
<tr>
<td>1950</td>
<td>$551</td>
<td>—</td>
<td>$688</td>
<td>$663</td>
<td>$597</td>
<td>$1,873</td>
<td>$729</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$974*</td>
</tr>
<tr>
<td>1973</td>
<td>$478</td>
<td>—</td>
<td>$514</td>
<td>$597</td>
<td>$874</td>
<td>$11,017</td>
<td>$650</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$11,590</td>
</tr>
<tr>
<td>2003</td>
<td>$720</td>
<td>—</td>
<td>$748</td>
<td>$853</td>
<td>$1,538</td>
<td>$19,425</td>
<td>$981</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$21,412</td>
</tr>
</tbody>
</table>

**TEN AFRICAN COUNTRIES**

<table>
<thead>
<tr>
<th>Year</th>
<th>Côte d’Ivoire</th>
<th>Egypt, Arab Rep. of</th>
<th>Ethiopia</th>
<th>Ghana</th>
<th>Kenya</th>
<th>Morocco</th>
<th>Nigeria</th>
<th>South Africa</th>
<th>Tanzania</th>
<th>Congo, Democratic Republic of</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1870</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1900</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$1,451</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1913</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$2,251</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1950</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$3,844</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1973</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$3,451</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2003</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>$353</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

*Hypothetical average: Assumes that the average movement of GDP per capita in countries of the group with data gaps was the same as the average for the countries remaining in the sample.

1.3 billion), now far ahead of India (second with 1.1 billion) when merely 50 years ago both nations were about equal in per capita income and more impoverished than most poor African nations today? Is there a road map leading to a life of plenty, a set of policies and institutional arrangements that nations can adopt to replicate the success of the United States, Europe, and other advanced economies? An honest answer to this question is disappointing. Economic development organizations such as the International Monetary Fund and the World Bank, as well as countless scholars who have committed their professional lives to the study of economic growth and development are fully aware of the limited theoretical structure yet pieced together.

The fact is well known that a nation’s total output is fundamentally determined (and constrained) by its total inputs—its natural resources, labor force, stock of capital, entrepreneurial talents—and by the productivity of its inputs, measured as the output or service produced by a worker (or unit of capital, or acre of land, etc.). To measure standards of living, however, we rely on output (or income) per capita, rather than total output. For changes in income per capita, productivity advance dominates the story. For example, if a nation’s population increases by 10 percent, and the labor force and other inputs also increase by 10 percent, output per capita remains essentially unchanged unless productivity increases. Most people (80 to 90 percent of the labor force) everywhere 250 years ago were engaged in agriculture, with much of it being subsistence, self-sufficient, noncommercial farming. Today that proportion is less than 5 percent in most advanced economies (3 percent in the United States). During this transition, people grew bigger, ate more, and worked less (and lived in more comfort). The sources of productivity advance that have raised output per farmer (and per acre) and allowed sons and daughters of farming people to move into other (commercial) employments and careers and into cities include advances or improvements in the following:

1. Technology (knowledge)
2. Specialization and division of labor
3. Economies of scale
4. Organization and resource allocation
5. Human capital (education and health)

These determinants are especially useful when analyzing a single nation’s rate and sources of economic growth; however, they are less satisfactory for explaining the reasons that productivity advances and resource reallocations have been so apparent and successful in some parts of the world but not in others.

To explain why some nations grow faster than others, we need to examine the ways nations apply and adapt these sources of productivity change. To use this perspective, we need to assess the complex relationships of a society’s rules, customs, and laws (the institutions) and its economic performance. For clarification, consider just one source of productivity change, technology. A new technology can introduce an entirely new product or service such as the airplane (and faster travel) or a better product such as a 2009 BMW automobile compared with a 1930 Model A Ford. A new technology can also lead to new materials, such as aluminum, that affect the cost of production. Aluminum provided a relatively light but strong material for construction of buildings and equipment.

In short, technological changes can be thought of as advances in knowledge that raise (improve) output or lower costs. They often encompass both invention and modifications of new discoveries, called innovation. Both require basic scientific research, trial and error, and then further study to adapt and modify the initial discoveries to put them to practical use. The inventor or company pursuing research bears substantial risk and cost, including the possibility of failure and no commercial gain. How are scientists,
inventors, businesses, and others encouraged to pursue high-cost, high-risk research ventures? How are these ventures coordinated and moved along the discovery-adaptation-improvement path into commercially useful applications for our personal welfare?

This is how laws and rules—or institutions as we call them—help us better understand the causes of technological change. Institutions provide a society’s incentive framework (Economic Reasoning Proposition 3: incentives matter), including the incentives to invent and innovate. Patent laws, first introduced in 1789 in the U.S. Constitution, provided property rights and exclusive ownership to inventors for their patented inventions. This path-breaking law spurred creative and inventive activity, albeit not immediately. Importantly, this exclusive ownership right includes the right to sell it, usually to people specialized in finding commercial uses of new inventions. The keys here are the laws and rules—the institutions that generate dynamic forces for progress in some societies and stifle creativity and enterprise in others. In advanced economies, laws provide positive incentives to spur enterprise and help forge markets using commercial legal and property right systems that allow new scientific breakthroughs (technologies) to realize their full commercial-social potential. Much more could be added to describe in detail the evolving and intricate connections among universities, other scientific research institutions, corporations, and various business entities (and lawyers and courts), all of which form interrelated markets of production and exchange, hastening technological advances (see Rosenberg and Birdzell, Jr. 1986).

Developing and sustaining institutional changes that realize gains for society as a whole are fundamental to the story of growth. The ideologies and rules of the game that form and enforce contracts (in exchange), protect and set limits on the use of property, and influence people’s incentives in work, creativity, and exchange are vital areas of analysis. These are the key components paving the road out of poverty.

Examining the successful economies of Europe, North America, and Asia suggests a partial list of the institutional determinants that allow modern economies to flourish:

- The rule of law, coupled with limited government and open political participation
- Rights to private property that are clearly defined and consistently enforced
- Open, competitive markets with the freedom of entry and exit, widespread access to capital and information low transaction costs, mobile resource inputs, and reliable contract enforcement
- An atmosphere of individual freedom in which education and health are accessible and valued

North admonishes that, “it is adaptive rather than allocative efficiency which is the key to long-term growth” (1994). The ability or inability to access, adapt, and apply new technologies and the other sources of productivity advances points directly to a society’s institutions. Institutional change often come slowly (customs, values, laws, and constitutions evolve), and established power centers sometimes deter and delay changes conducive to economic progress. How accepting is a society to risk and change when outcomes of actions create losers as well as winners (Schumpeter 1934)?

In the following pages, we retrace the history of the American economy, not simply by updating and recounting old facts and figures, but also by emphasizing the forging of institutions (customs, values, laws, and the Constitution). The end of the cold war and the growing body of knowledge about the importance of institutions to economic progress give solid reasons for recasting the historical record and bearing witness to the strengths and shortcomings of an emerging democracy operating within the discipline of markets constrained by laws and other institutions.
SELECTED REFERENCES AND SUGGESTED READINGS


CHAPTER 25

World War II

In 1939, only 21 years after the end of World War I, the world was once more engulfed in global war. Ultimately, the war took an enormous human toll. The United States suffered 405,000 deaths in World War II, 292,000 in battle. In addition, 671,000 suffered nonmortal wounds. The American death toll was four times that of World War I and two-thirds that of the Civil War. For the other belligerents, the tolls were much higher. All told, about 40 million people died in World War II.

America’s primary economic goal was to supply sufficient arms to her own military forces and to those of her allies to overwhelm the Axis (Germany, Japan, and their allies), to become, as President Roosevelt put it, the “Arsenal of Democracy.” This goal was achieved with astonishing speed. In a few short years, the factories of the United States were turning out more weapons than any other nation and more than all the Axis powers combined, even though the Axis had begun converting to a war footing years before the United States.

In the short run, the war effort alleviated the need for many of the New Deal’s emergency measures. Work relief was no longer necessary because the nation’s factories were humming at full capacity; emergency funds were no longer needed to bail out firms faced with bankruptcy because profits were surging. In the long run, the war effort reinforced the restructuring of the economy that had taken place in the 1930s. The association of large federal deficits and low unemployment convinced many economists and the public at large that Keynes’s cure for unemployment was effective. The government’s management of the mobilization convinced economists and the public at large that the federal government had the ability to successfully manage large-scale projects.

MOBILIZING FOR WAR

World War II began in September 1939, when German forces attacked Poland. Britain and France, who had guaranteed Poland’s independence, then declared war on Germany. In the United States, a brief surge occurred in industrial production as manufacturers anticipated a repeat of the heady days of 1916 when a neutral America had made enormous profits by supplying a Europe at war. Industrial production sagged during the “phony war,” however, when it appeared that Britain, France, and Germany, although officially at war, would avoid a major clash of arms. The phony war ended in May 1940 when Germany launched a blitzkrieg (lightning war) attack against the Low Countries, swept around France’s Maginot Line, and conquered France. American manufacturers began building up inventories in anticipation of future shortages, Britain and her remaining allies began placing large orders for American war materials, and the United States launched a vastly expanded program of military procurement.
Initially, Britain was asked to pay for arms on a cash-and-carry basis. It paid by transferring gold and by requisitioning American bank deposits and securities owned by British nationals. This policy soon stripped Britain of much of its overseas investment. When these sources of funds began to run out, President Roosevelt succeeded in establishing the Lend-Lease program in March 1941. The name “Lend-Lease” was calculated to deflect attention from the simple fact that the U.S. government would now be paying for the arms sent to Britain and its other allies.

At first, prices remained relatively stable because millions of American workers were still unemployed and underemployed and because industrial capacity was underutilized. The United States had not yet reached its production possibilities curve, to use the economist’s term. By the autumn of 1940, however, supply had become less elastic and wholesale prices had begun to rise. In 1941, the American economy was moving into high gear despite some pockets of unemployment. Production of steel ingots and castings, for example, had already reached 59.8 million long-tons in 1940, exceeding the previous peak of 56.4 million reached in 1929; in 1941, production reached 74 million long-tons. Sulfuric acid, a chemical having a wide variety of industrial applications, was also being produced in unprecedented quantities: 6.8 million short-tons in 1941 compared with 5.3 million in 1929. The Federal Reserve Board’s index of industrial production reached a level of 139 in 1941 compared with 100 in 1929. Although American industry was moving into high gear, many Americans still doubted the wisdom of aid to Britain and its allies. All doubts vanished, however, on December 7, 1941. To quote President Roosevelt’s famous war message:

Yesterday, December 7, 1941—a date which will live in infamy—the United States of America was suddenly and deliberately attacked by the naval and air forces of the Empire of Japan. The facts of yesterday speak for themselves. The people of the United States have already formed their opinions and well understand the implications to the very life and safety of our nation.

America was now fully committed to war against the Axis powers (Germany had quickly declared war against the United States after the Japanese attack and the United States reciprocated), but many military and economic questions still had to be answered.

Under President Roosevelt’s leadership, the United States adopted a bold plan of economic mobilization. America would use its vast industrial might to mass-produce arms and overwhelm the Axis with sheer firepower. Characteristically, President Roosevelt called for the unheard-of total of 50,000 airplanes, although at the time no one knew how such a vast number of planes could be produced. Economic mobilization involved many trade-offs. The most important question was how far to reduce civilian consumption—the choice, as it was often put, between “guns and butter.”

Table 25.1 shows, in very broad terms, how America allocated its resources to the war effort: In 1929, the federal government was spending a small fraction of gross national product (GNP), 2.6 percent. Even in 1940, after years of expansion in the role of the federal government under the New Deal, the federal government was spending about 8.2 percent of GNP. The war changed things dramatically. The maximum effort occurred in 1944, when the federal government spent some $722.5 billion (at 1982 prices), about 52.3 percent of total GNP.

"The term “guns or butter” is usually attributed to German Field Marshal Hermann Goering, who in the 1930s demanded “cannon instead of butter.” In the United States, civilian consumption of butter did fall during the war, but this appears to have been simply part of a long-term trend toward lower consumption. Consumption of ice cream, on the other hand, was higher during the war, also part of a long-term trend."
Another way to analyze these figures is also of interest. Between 1940 and 1944, total real federal spending increased by $658.9 billion ($722.5 in 1944 – $63.6 in 1940), while total real GNP increased by $607.7 billion ($1,380.6 – $772.9). Thus, 92.2 percent of the increase in spending ($607.7 ÷ $658.9) was paid by the increase in real GNP; the remaining 7.8 percent of the increase was offset by a decline in production for the civilian sector. The great bulk of the resources for the war effort was obtained by employing previously unemployed resources and by using already employed resources more intensively. Remarkably enough, Germany was also able to sustain civilian consumption well into the war, although not throughout. In other countries, though, where the capacity to expand was lower, the need to sacrifice current consumption or investment to make available resources for the military effort was correspondingly greater.

**ECONOMIC INSIGHT 25.1**

"GUNS OR BUTTER" 1939–1949

The production possibilities curve shows the trade-off between guns (military spending), measured on the horizontal axis, and butter (civilian spending), measured on the vertical axis. The figure shows the actual combinations of guns and butter produced annually during the war years and a hypothetical curve drawn through the combinations achieved in 1944 and 1948. Some of the combinations lie inside the production possibilities curve (1939, 1940, 1941, and 1942, in particular); these points indicate that the economy was still operating below its maximum possible output. Thus, in general, the United States increased its war output mainly by moving horizontally toward the production possibilities curve rather than moving along it.
Trade-offs

While the decision about how much to reduce civilian consumption and investment was the most important, other more subtle trade-offs were also involved in wartime mobilization. Economic Reasoning Proposition 2, choices impose costs (see page 8), stresses the importance of trade-offs in war as well as in peace. One such trade-off occurred in the area of industrial safety. Industrial accidents, often resulting in serious injury or death, increased dramatically during the war. The official figures show an increase in the number of disabling injuries per million hours worked in manufacturing from 15.3 in 1940 to 20 in 1943, the all-time peak. To some extent this was to be expected, with so many more men and women working so many more hours in dangerous jobs.

Should greater efforts have been made to maintain safety? Possibly, but the problem was always one of the trade-off between safety and production. Well-rested workers are safer workers, but more rest breaks may mean lower output. More work space in shipping yards reduces the risk of accidents, but more work space means higher construction costs and fewer resources available for building other facilities.

Another subtle trade-off lay between the quality and quantity of arms produced. Changing technology and battlefield experience were constantly suggesting modifications of existing weapons. Making these modifications often meant tearing down and rebuilding an assembly line, thereby losing valuable production time. This trade-off was often a bone of contention between military leaders, who would argue for the most sophisticated weapon possible, and the civilians in charge of military production, who were more mindful of the potential loss in production. When Hitler’s troops attacked the Allied invasion force in the Battle of the Bulge, Germany’s tanks, the famous panzers, were as good as or better than any tank in the hands of the Allies, but they were vastly outnumbered.

On the whole, America’s decision to mass-produce the weapons of war turned out to be a brilliant success. America by itself produced more arms than the Axis countries combined. Not only were supplies such as small arms and ammunition mass-produced, but also planes and even ships to carry the arms to the theaters of war. At Henry Kaiser’s shipyards in Portland, Oregon, where some of the most innovative techniques were used, one of the famous Liberty ships was produced in a record eight days. To some extent, as Henry A. Gemery and Jan S. Hogendorn (1993) have shown, mass-production techniques were used even in producing destroyers.

### Table 25.1 Real Gross National Product (in billions of 1982 dollars)

<table>
<thead>
<tr>
<th>YEAR</th>
<th align="right">GNP</th>
<th>Total Federal Purchases of Goods and Services</th>
<th>Previous Column as a Percentage of GNP</th>
<th>Total Civilian Purchases of Goods and Services*</th>
<th>Previous Column as a Percentage of GNP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1929</td>
<td align="right">$ 709.6</td>
<td>$ 18.3</td>
<td>2.58%</td>
<td>$ 691.3</td>
<td>97.42%</td>
</tr>
<tr>
<td>1939</td>
<td align="right">716.6</td>
<td>53.8</td>
<td>7.51%</td>
<td>662.8</td>
<td>92.49%</td>
</tr>
<tr>
<td>1940</td>
<td align="right">772.9</td>
<td>63.6</td>
<td>8.23%</td>
<td>709.3</td>
<td>91.77%</td>
</tr>
<tr>
<td>1941</td>
<td align="right">909.4</td>
<td>153.0</td>
<td>16.82%</td>
<td>756.4</td>
<td>83.18%</td>
</tr>
<tr>
<td>1942</td>
<td align="right">1,080.3</td>
<td>407.1</td>
<td>37.68%</td>
<td>673.2</td>
<td>62.32%</td>
</tr>
<tr>
<td>1943</td>
<td align="right">1,276.2</td>
<td>638.1</td>
<td>50.00%</td>
<td>638.1</td>
<td>50.00%</td>
</tr>
<tr>
<td>1944</td>
<td align="right">1,380.6</td>
<td>722.5</td>
<td>52.33%</td>
<td>658.1</td>
<td>47.67%</td>
</tr>
<tr>
<td>1945</td>
<td align="right">1,354.8</td>
<td>634.0</td>
<td>46.80%</td>
<td>720.8</td>
<td>52.20%</td>
</tr>
<tr>
<td>1946</td>
<td align="right">1,096.9</td>
<td>159.3</td>
<td>14.52%</td>
<td>937.6</td>
<td>85.48%</td>
</tr>
<tr>
<td>1950</td>
<td align="right">1,203.7</td>
<td>116.7</td>
<td>9.70%</td>
<td>1,087.0</td>
<td>90.30%</td>
</tr>
</tbody>
</table>

*Includes state and local government spending.


**Chapter 25: World War II**
Overwhelming Firepower

Table 25.2 shows the annual production of munitions (cumulatively for 1933–1939) by the five major powers. By 1939, Germany and Japan had accumulated considerable stocks of munitions. They hoped to win against countries with greater long-term economic capacities by employing these munitions in blitzkrieg attacks before their opponents had time to arm. Although they won numerous initial battles, eventually their paths of expansion were blocked, and the war became one of attrition. The United States launched a huge program to build both arms and the means of producing them, and its production surged. By 1942, U.S. munitions production exceeded that of Germany and Japan combined. Despite the ability of Germany and Japan to increase their production in the face of heavy air attacks (see Economic Insight 25.2 for a discussion of strategic

<table>
<thead>
<tr>
<th></th>
<th>1933–1939</th>
<th>1940</th>
<th>1941</th>
<th>1942</th>
<th>1943</th>
<th>1944</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>$1.5</td>
<td>$1.5</td>
<td>$4.5</td>
<td>$20</td>
<td>$38</td>
<td>$42</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2.5</td>
<td>3.5</td>
<td>6.5</td>
<td>9</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>U.S.S.R.</td>
<td>8</td>
<td>5</td>
<td>8.5</td>
<td>11.5</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>Germany</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>8.5</td>
<td>13.5</td>
<td>17</td>
</tr>
<tr>
<td>Japan</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4.5</td>
<td>6</td>
</tr>
</tbody>
</table>


U.S. planes leaving the production line. By 1944 the United States was producing 100,000 per year.
THE ECONOMICS OF STRATEGIC BOMBING

Tactical bombing uses the air force as an aid to the ground or sea forces. Strategic bombing, however, attacks the enemy’s civilian population. Often the purpose is economic: to reduce the enemy’s ability to equip and support its armed forces. During World War II, all of the belligerents used strategic bombing, but the United States and Britain relied on it the most. Initially, Britain and the United States emphasized striking at “sensitive points” in the German economy such as transportation, steel, ball bearings, and so on. The campaigns based on destroying sensitive points, however, ran into trouble because the Germans could protect these points with massive antiaircraft defenses, and because the Germans found ways to harden sensitive sites and disperse facilities. The Germans also found substitutes for items in short supply. In general, the attempt to destroy sensitive points in the enemy economy proved frustrating, although the attacks on oil production and rail transport at the end of the war were fairly successful. So the Allies turned to mass destruction—destroying as much of the enemy’s industrial base as possible—as a way to end the war. This was truer for the British who bombed at night than for the Americans who bombed by day and continued to pay some attention to the theory of striking at sensitive points. Nevertheless, in the end, both countries followed a policy of mass destruction. To be effective such a policy has to be, and was, horrific. The loss of civilian lives in Germany and Japan was staggering. After the war, the U.S. Strategic Bombing Survey, led on the civilian level by economist John Kenneth Galbraith, found that strategic bombing had not been effective in the sense of reducing German or Japanese munitions production to very low levels (Galbraith 1981). On the contrary, production of munitions continued to rise in Germany and Japan until very near the end of the war. This finding encouraged Galbraith to become a vigorous opponent of bombing in the Vietnam era. There is, however, a vigorous debate about the effectiveness of strategic bombing. Richard Overy is one of the leading voices on the other side. In Why the Allies Won (1995), he argues that strategic bombing was important from a military perspective because it opened a second front against Germany. One-third of German artillery production was for antiaircraft protection, and most of the planes produced in Germany went up to fight the British and American bombers. This diversion of resources eased the burden of the Soviets fighting Germany on the Eastern Front.

The results of strategic bombing. The Allied air forces devastated thousands of acres in cities in Germany and Japan in an attempt to destroy their ability to wage war.
bombing), and despite the advantage of fighting behind defensive lines, the final outcome was no longer in doubt. The enormous weight of the combined munitions production of the United States and her allies meant that Germany and Japan would be defeated sooner or later.

Several agencies, the most important being the War Production Board, tried to manage the vast expansion of munitions production. One tool was the priority, essentially a rating placed on contracts to guide manufacturers in scheduling production. The reallocation of resources was so rapid and so huge that the total volume of new contracts outstanding was said to exceed the GNP. Munitions production was reaching its peak when the War Production Board finally solved the problems—such as “priority inflation” (too many contracts having the highest priority)—that had developed soon after mobilization began. In the end, the profit motive was the primary allocator of resources.

**FISCAL AND MONETARY POLICY**

The United States relied on the same methods to mobilize resources in World War II that it had relied on in World War I. To mobilize labor, it relied on the draft; to mobilize financial resources, it relied on taxes, borrowing, and creating money. The war radically changed the income tax. The exemptions for single and married persons were lowered. In 1943, the payroll deduction system for collecting income taxes was introduced, and the term *take-home pay* entered the language. Together, these innovations meant that the income tax had become a mass tax for the first time. Corporate tax rates were also
increased, and an excess profits tax was introduced. As a result of these tax increases and
the rapid increase in the tax base, the United States was able to finance about 40 percent
of the war with taxes (see Table 25.3). This was a larger share of total spending on the
war than had been financed by taxes in the Civil War or World War I. Nevertheless, the
United States still had to borrow large sums to help finance the conflict (refer to New
View 25.1).

Conceivably, all wartime deficits could have been financed by sales of securities to the
general public, but (despite highly publicized war bond drives) it is likely that the interest
rates required to market those bonds would have been very high by historic standards.
Therefore, the Federal Reserve took the extraordinary step of “pegging” the rate of interest
on government securities. It accomplished this by pledging to buy government secur-
eties whenever their price fell below predetermined support levels. On the surface,
selling bonds to the Fed seems to be a free ride because it minimizes the future interest
costs that the government incurs. The fly in the ointment (or rat in the soup, depending

**TABLE 25.3 FINANCING WORLD WAR II**

<table>
<thead>
<tr>
<th>BILLIONS OF DOLLARS, 1941–1946</th>
<th>PERCENTAGE OF EXPENDITURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total federal expenditures for wara</td>
<td>$320.2</td>
</tr>
<tr>
<td>Tax revenues</td>
<td>129.8</td>
</tr>
<tr>
<td>Borrowing from the public</td>
<td>115.8</td>
</tr>
<tr>
<td>Creating new money</td>
<td>74.6</td>
</tr>
</tbody>
</table>

*aTotal expenditures 1941–1946, less six times 1940 expenditures.


HOW SHOULD WARS BE FINANCED?

The World War II debate over whether to rely mainly on taxes or debt to finance the war (no one thought that relying on printing money was a good idea) continues to be relevant when the United States goes to war. The Roosevelt administration, reflecting one school of thought, proposed financing the greater part of the war by raising taxes. According to the administration, doing so would avoid burdening the younger generation (including those doing the fighting) with having to pay the interest and principal on a large debt in future years. Getting Congress to raise taxes, however, is never easy. Republican congressmen complained that high tax rates discouraged work, and they supported only partial financing through increased taxation. Today, many neoclassical economists, for example Robert J. Barro (1989) agree that “smoothing taxes”—raising them only a bit during wars and relying mainly on debt—is the most efficient way to finance a war. Supporters of deficit finance can also point out that the federal debt reached $259 billion in 1945, 121 percent of gross domestic product (GDP), without causing an obvious crisis, as evidence that the economy can tolerate very high levels of debt.

In thinking about this debate, it is perhaps relevant to remind ourselves of what Adam Smith, a proponent of tax finance, had to say:

Wars [if financed by taxes rather than debt] would in general be more speedily concluded, and less wantonly undertaken. The people feeling, during the continuance of the war, the complete burden of it, would soon grow weary of it, and the government, in order to humor them, would not be under the necessity of carrying it on longer than it was necessary to do so. (Smith 1976 [1776], 925)
on one’s view of things) is that the Federal Reserve must create new money to purchase these securities, and this adds to the inflationary pressures facing the economy.2

In 1939, unemployment remained at the stubbornly high level of 11.3 percent of the labor force. Keynesians claimed that unemployment could be cured with a sufficient increase in government spending, particularly deficit-financed spending. True, the deficit was 3.07 percent of GNP in 1939 (see Table 25.4). What was needed, according to the Keynesians, was simply a much bigger deficit. By 1944 the deficit had been vastly increased, to 22.5 percent of GNP, and unemployment was virtually gone (1.2 percent), one of the lowest rates on record. Most economists, particularly those of the younger generation such as future Nobel Prize winners Paul Samuelson and James Tobin, found this demonstration of the effectiveness of the Keynesian remedy for unemployment convincing.

A number of economists at the time, as well as a growing number since, were still skeptical about Keynes’s cure. For one thing, the data are also consistent with the monetarist claim that a large increase in the money supply would cure the depression. Consider the last column of Table 25.4. The stock of money in 1939 was only slightly higher than that of 1929, but by 1944, it had more than doubled. Some economists have pointed out that the drafting of large numbers of young men into the armed forces removed many individuals who had a high probability of being unemployed from the labor force. As in so many cases, the lessons of history are ambiguous because in the natural experiments of history other factors are seldom as constant as we would like. Whatever reservations economists may now entertain about this demonstration of the Keynesian message, there is no doubt that it had a profound impact on economic policy making during and in the decades following the war. Even at the time, however, some Keynesians worried that the inflationary pressures produced by wartime policies of deficit spending had been checked only by a set of wage and price controls that would be unacceptable in peacetime.

## WAGE AND PRICE CONTROLS

Early in the war, the Roosevelt administration decided that it would combat rising prices with direct controls. It would try to persuade firms not to raise prices by appealing to their patriotism; if persuasion failed, it would simply make price increases illegal.

---

2The interest rate paid on a bond is determined by the relationship between the fixed annual payments promised by the bond and the market value of the bond. High market values imply low interest rates.
In May 1940, President Roosevelt set up the National Defense Advisory Committee and chose Leon Henderson, a crusty, cigar-smoking New Dealer, to head its Price Stabilization Division. Henderson sought voluntary agreements from producers in key areas of the economy not to raise prices, a policy that met with little success. Prices continued to rise. In April 1941, Roosevelt strengthened Henderson’s hand by creating the Office of Price Administration and Civilian Supply (OPA). Eventually, OPA would become the civilian agency most familiar to the average American because it set the prices and determined the quantities of the goods and services consumed every day. Of special interest to economists was the creation of the Price Division of OPA under the direction of John Kenneth Galbraith. In the postwar period, Galbraith would become a leading advocate of the liberal view that America’s social and economic problems could be solved by expanding the role of the federal government. Undoubtedly, his experience at the OPA, with its enormous—and in Galbraith’s (1952) view favorable—effect on the economy, profoundly influenced his thinking.

Initially, the OPA hoped to control the general price level by applying controls in only selected sectors, but uncontrolled prices continued to rise, and at an increasing pace. In April 1942, OPA issued the General Maximum Price Regulation, affectionately known as General Max, which put a ceiling on most prices. Even this measure was only partially successful. One problem was that each seller was responsible for setting its own prices according to the rules issued by the government. It was altogether too easy for a firm to justify charging a high price by pointing to an unusually high base period price or an unusually high price set by a competitor. Effective price control required that the OPA set specific dollars-and-cents prices that its employees or its boards of volunteer price watchers could check.

In April 1943, President Roosevelt issued his famous “hold-the-line” order requiring OPA to refuse all requests for price increases except in extremely limited circumstances. This approach, economically suspect because it did not provide for the adjustment of relative prices, but easy to defend in the court of public opinion, worked surprisingly well for the remainder of the war. The official consumer price index rose only 1.6 percent per year from April 1943 until February 1946, when the policy began to come apart.

**Hidden Price Increases and the Black Market**

The official index alone, however, does not tell the whole story. A basic proposition of economics is that if a price ceiling is set below the free-market equilibrium, a scramble for supplies will occur that will produce attempts to evade the ceiling. There were innumerable examples during the war. In some cases, evasion took the form of quality deterioration: Fat was added to hamburger, coarse fabrics were substituted for finer ones, and maintenance on rent-controlled apartments was reduced. Quality deterioration could be limited by regulations that specified the exact content of a product, such as the specified butterfat content of milk, but such regulations tended to get longer and longer and became a problem in themselves. In one famous case, Lou Maxon, an OPA official, resigned in 1943, complaining about what he saw as the antibusiness atmosphere at OPA. Many of Maxon’s charges were exaggerated, but the six-page regulation specifying the content of fruit cakes, which he used to dramatize his charges, spoke to a real problem.

“Forced uptrading” was another problem caused by price controls. Before the war, manufacturers often offered buyers a choice between low-priced, low-quality items and high-priced, high-quality items. Typically, the high-priced lines carried higher profit margins but sold in smaller volumes. With wartime demand in all lines exceeding supply, manufacturers eliminated the lower-priced lines. This was fine for those consumers who wished to move up to the higher-priced item anyway, but for those who were forced
to trade up, the difference between what they would have voluntarily paid for the high-priced line and what they were forced to pay because the low-priced line was eliminated was a hidden price increase.

The most startling form of evasion, although not the most frequent, was the black market. Here, buyers willing to pay more than the official price and sellers willing to sell for more would meet away from the prying eyes of the OPA. The black market took many forms, depending on the product and the enforcement effort being made by the OPA. In New York, there were “meat-easies,” much like the speakeasies that had flourished during prohibition, where one could buy extra meat but at prices much higher than those set by the OPA. After production of automobiles resumed at the end of the war, evasion of automobile price controls was widespread. Some of it occurred in the dealer’s showroom, where cash payments were often made on the side while official documents showed that the car had been sold at the OPA ceiling. A true black market also developed. In Leesville, South Carolina, for example, cars recently purchased from dealers were brought from all over the country to a huge lot where they would be resold at black-market prices.

Rationing

Rationing is one way to reduce evasion when prices are held below their free-market equilibrium. A consumer who is assured at least a bare minimum is less likely to enter the black market than a consumer who is in danger of being left without anything in a mad scramble for supplies. Moreover, a company that must be able to show the authorities ration tickets corresponding to the output it has sold will find it more difficult to divert supplies to the black market. In some cases, rationing was undertaken to achieve particular policy goals. Gasoline was rationed, for example, to reduce the use of automobile and truck tires, which were in short supply because of the rubber shortage. The real purpose of government programs, thus, was sometime difficult for the public to understand. A well-publicized campaign to save and recycle cooking fat, for example, led consumers to believe that the fat was needed to make a chemical crucial to the war effort. The real purpose, however, was to increase the supply of fat for making soap because manufacturers of soap feared that if soap was rationed during the war some consumers would continue to buy less afterward (Rockoff 2007).

The simplest form of rationing was a ticket entitling the holder to buy a certain quantity of a certain good that was surrendered when the good was purchased. Tires, the first commodity rationed, were handled in this way. Under the red-point system for meats and fats, however, the consumer was periodically supplied with a certain number of points. Each good was assigned a point price, and the consumer could choose among rationed items as long as he or she had enough ration points.

Balancing the supply of goods and the number of ration tickets or points was no easy matter. To make the red-point system operate more smoothly, the OPA issued red-point tokens that could be taken as change and stored for use at a later date. By late 1944, surveys showed that consumers had stored up large quantities of these tokens, and the OPA feared a run on the stores that would leave shelves bare and confidence in the rationing program shaken. To regain control, OPA canceled all outstanding ration tokens, a move that cost the agency a great deal of public support. In 1945, as the war came to a close, most of the rationing programs were discontinued, a highly popular decision.

When legislation authorizing price controls expired in June 1946, Congress passed a new law. It was so riddled with loopholes that President Truman vetoed it in the hope that a strong dose of inflation would force Congress to pass a stiffer measure. Eventually, legislation was passed that permitted the recontrol of selected prices. When meat prices
were recontrolled, ranchers withheld their animals from the market—after all, it was clear that price controls were on the way out and that prices could only go higher—and the result was a meat shortage. Faced with outraged consumers on one hand and recommendations that he nationalize the nation’s cattle herds on the other, Truman decided to terminate price controls for good.

WARTIME PROSPERITY?

If we look at a graph of real GDP per capita, as shown in Figure 25.1, the war years stand out as a unique achievement. Apparently, real per capita income was higher during the war than it was before or after. The statistics are matched by personal memories of the war and by historical accounts that single out the war years as a uniquely prosperous period. Robert Higgs (1992), however, has recently challenged this view of the war and claimed that the war was not a period of unique prosperity, but rather a period of continued depression. Real prosperity, according to Higgs, did not come until after the war. In other words, Higgs asserts that the story illustrated so eloquently in Figure 25.1 is spurious.

First, Higgs (1992) points out that many problems created by price controls and rationing, as mentioned, make measurement of output and especially civilian consumption during the war problematic. If price indexes are understated because they miss hidden price increases or because the price of rationed goods understates the difficulty of acquiring them, output will be overstated. Higgs also points out that war output did not contribute directly to consumption, either at the time or in the future. In his view, war production should be omitted altogether from GDP.

**FIGURE 25.1**
Real per Capita Income in 1987 Dollars

Official estimates of real GDP per capita reached an extraordinary peak in 1944. But can we really compare the output of the economy during the war with the output before or after?

Source: *U.S. Bureau of Economic Analysis, 1992*
One can take issue with Higgs’s arguments. Any measurement of the extent of hidden price increases during the war is bound to have a large margin of error. Higgs’s claim that war output should be omitted from GDP is also debatable. After all, we include categories, such as medical care, that raise many of the same issues in GDP. An operation for cancer, like fighting a battle against a determined enemy, is costly and painful. Indeed, we often use the same language: “He is battling for his life against cancer.” Cancer operations and battles may be good investments because they protect our ability to enjoy life in the future.

Nevertheless, Higgs’s (1992) arguments do help us understand the nature of “wartime prosperity.” For many people, the war did mean an increase in their current real consumption compared with that during the grinding poverty of the Depression. For others, the important thing was not consumption during the war but the availability of jobs for the asking through which one could earn money that would be valuable in the years to come, even if it couldn’t be spent during the war because of shortages and rationing. Economic Reasoning Proposition 5, evidence and theory give value to opinions, reminds us that evidence matters. Higgs’s analysis reminds us that we must question and probe the evidence for its real meaning.

LABOR DURING THE WAR

Real wages rose during the war, at least when official price indexes are used to deflate wages. But the rise was not uniform. The gap between the wages earned by managers and workers, and the gap between the wages earned by skilled and unskilled workers, narrowed. The “Great Compression” in wage differences persisted for some years into the postwar era (Goldin and Margo 1992), although it eventually disappeared. Wartime wage controls, which were tougher at the high end of the wage distribution, and the strong demand for unskilled labor seem to be the main factors behind this important, albeit temporary, increase in wage equality.

The war put relations between labor and management on hold. The Roosevelt administration had been supporting labor’s efforts to organize, bargain collectively, and strike; now labor was expected to cooperate with the effort to maximize production. Labor took a no-strike pledge, paralleling management’s no-lockout pledge. For the most part, labor kept its pledge. The major exception was the United Mine Workers, under their charismatic leader John L. Lewis. As the result of public indignation over strikes in the coalfields, Congress passed the Smith-Connally War Labor Disputes Act in 1943, which provided for government takeover of mines and factories in essential war industries that were hampered by strikes. Despite this case, however, the conflict between labor and management was generally kept in check during the war by labor’s patriotism and by the government’s extraordinary powers.

The real crunch came at the end of the war. As workers’ overtime disappeared and real earnings were eroded by rising prices, labor leaders were under pressure to secure wage increases, which were not forthcoming without a struggle. Meanwhile, the widespread work stoppages of 1945 and 1946, shown vividly in Figure 25.2, alienated large segments of the electorate.

During this period, employers complained that they were being caught in the jurisdictional disputes of rival unions and that labor itself was guilty of unfair practices. A belief was growing that union power was being used to infringe on the rights of individual workers. In fact, employers often used strikes to pressure the OPA to grant a price increase. Labor, of course, realized that this avenue was open to employers, and this entered into their strike calculations. The OPA, in many cases, claimed that higher wages...
could be paid without granting higher prices, but the path of least resistance often was to grant a round of wage and price increases in an industry experiencing a strike.

After the Republicans won control of Congress in 1946, they lost no time in drawing up a long, technical bill that significantly amended the Wagner Act. The new law, passed in 1947 over President Truman’s veto, was officially called the Labor Management Relations Act but became known familiarly as the Taft-Hartley Act. The act reflected the belief that individual workers should be protected by public policy not only in their right to join a labor organization but also in their right to refrain from joining. The closed-shop agreement, under which the employer hires only union members, was outlawed. Union shop agreements, which permit nonunion members to be employed but require them to join the union within a certain time period after starting to work, were permitted. However, the enforcement of union security provisions was limited to cases of nonpayment of dues. More important, the law permitted individual states to outlaw all forms of union security, including the union shop.

The Taft-Hartley Act, unlike the Wagner Act, assumed that the interests of the union and individuals in the union were not identical, taking the view that many union members were “captives” of the labor bosses—a position offensive to a great part of organized labor.

The most important features of the Taft-Hartley Act were those purporting to regulate unions in the “public” interest. A union seeking certification or requesting an investigation of unfair labor practices had to submit to a scrutiny of its internal affairs by filing statements, and its officers were required to sign affidavits stating that they were not members of the Communist Party. The right to strike was modified by provision of a cooling-off period after notice of termination of contract, and the president of the United
States was given authority to postpone strikes for 80 days by injunction. More significant was the outlawing of certain unfair union practices. After 1947, it was unfair for a union to do the following:

1. Restrain or coerce employees regarding their right to join or refrain from joining a labor organization, or restrain or coerce employers in the selection of employer representatives for purposes of collective bargaining or adjustment of grievances.
2. Cause or attempt to cause an employer to discriminate against an employee.
3. Charge, under a valid union shop agreement, an excessive initiation fee.
4. Refuse to bargain collectively with an employer when the union involved is the certified bargaining agent.
5. “Featherbed” the job—that is, cause an employer to pay for services that are not performed.
6. Engage in, or encourage employees to engage in, a strike where the object is to force one employer to cease doing business with another employer (the secondary boycott).

After 12 years of almost complete freedom, labor found the Taft-Hartley Act harshly restrictive. Dire warnings were voiced about the coming decline of trade unionism in America. Labor’s leadership was incensed at the offensive language and punitive spirit of the act. Many of the provisions looked worse in print, however, than they proved in practice. The injunction clause, for example, stirred memories of the days when the courts granted injunctions at the request of private parties; however, in the hands of a president of the United States, acting in an emergency, the injunction was no longer a destructive weapon. Moreover, although union problems persist today, they have arisen primarily from sources other than the Taft-Hartley Act.

**WARTIME MINORITY EXPERIENCES**

World War II had a significant effect on all Americans, but especially certain minorities. Women entered the workforce to fill job vacancies left by soldiers (see Perspective 25.1 on page 36). The wartime boom accelerated the long-term movement of poor whites and African Americans out of southern agriculture. Both groups responded to similar economic facts of life. Altogether, almost a million African Americans moved from southern farms to industrial centers in the South, the Northeast, the Midwest, and the Pacific Coast (Vatter 1985, 127). The forced relocation and internment of more than 100,000 Japanese Americans caused them enormous hardships (Broom and Reimer 1949; Robinson 2001).

**Rosie the Riveter**

One of the most dramatic developments during the war was the change in the role of women in the labor force. Some 200,000 women entered the military services. Mainly they served in the Women’s Army Corps (WAC) and Women Accepted for Volunteer Emergency Services (WAVES), with smaller numbers in the Marine Corps, Coast Guard, and the Women’s Auxiliary Ferrying Service. Women also entered the civilian labor force in large numbers. Many entered jobs that women had filled before the war, but many others, as symbolized by “Rosie the Riveter,” entered jobs traditionally filled by men. Women became toolmakers, crane operators, lumberjacks, and stevedores. About 14 percent of the women who had been out of the paid labor force before Pearl Harbor went to work. High wages and a desire to serve their country encouraged women to take jobs. Government propaganda urged women to work in industry and to help supply the weapons needed to defeat the Axis (Rupp 1978). This propaganda also encouraged
women to think of these jobs as temporary, to be turned back to returning soldiers after the war was over. Perhaps somewhat more surprisingly, 34 percent of the women who had been working before Pearl Harbor left the labor force. Increased wages earned by other family members, and a decline in the availability of household workers explain this phenomenon (Goldin 1991).

Women’s participation in the labor force had seen a long-term upward trend throughout the twentieth century, but the war decade stands out as a period of especially rapid growth. In 1940, only 13.8 percent of married women participated in the paid labor force. In 1950, that figure stood at 21.6 percent, an increase in the participation rate of 5.65 percent per year, a higher rate of increase than in any other decade. This was partly the result of changes in attitudes brought about by the war. Women who went to work temporarily (or so they or others may have thought) developed a taste for working in the paid labor force, as well as useful skills, which encouraged them to remain in the labor force after the war was over. Some employers, moreover, after seeing women performing well in jobs traditionally reserved for men, may have revised their ideas about the productivity of working women.

African Americans

The movement of the African American population had dramatic social and political consequences. In 1940, the African American population was about evenly divided between urban and rural areas; in 1950, it was predominantly urban. This rural exodus continued in the 1950s and 1960s. By 1970, three-quarters of the African American population lived in urban areas. The urbanization of the African American population contributed importantly to the Civil Rights movement and to the ending of legal discrimination. To some extent, that movement began during the war.

The military forces remained segregated for the duration of the war, but in 1940, officer’s candidate schools (except those for the air force) were desegregated. Moreover, the outstanding record compiled in the military by African Americans, along with the growing demand by the African American community for equal justice, contributed to President Harry S. Truman’s decision to issue an executive order desegregating the armed forces in 1948. Progress was also made on the home front. In February 1941, A. Philip Randolph, head of the Brotherhood of Sleeping Car Porters, organized a march on Washington to protest discrimination in defense industries. The Roosevelt administration prevailed on the Randolph group to call off the march in exchange for an executive
order forbidding discrimination in defense work and the establishment of the Federal Committee on Fair Employment Practices. The committee, although lacking in enforcement powers, worked with employers to end discrimination. Research by William Collins (2000, 2001) shows that these efforts had a positive impact on African American employment levels in war-related industries and that continued employment in such industries was associated with a significant wage premium for blacks.

The Committee on Fair Employment had to work, moreover, within a context in which violence was always possible. White–African American violence was not as

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>1940</th>
<th>1950</th>
<th>INCREASE</th>
<th>PERCENTAGE OF TOTAL INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional, technical</td>
<td>1,608</td>
<td>2,007</td>
<td>399%</td>
<td>8.25%</td>
</tr>
<tr>
<td>Managers, officials, proprietors</td>
<td>414</td>
<td>700</td>
<td>286</td>
<td>5.91</td>
</tr>
<tr>
<td>Clerical</td>
<td>2,700</td>
<td>4,502</td>
<td>1,802</td>
<td>37.26</td>
</tr>
<tr>
<td>Sales</td>
<td>925</td>
<td>1,418</td>
<td>493</td>
<td>10.19</td>
</tr>
<tr>
<td>Manual</td>
<td>2,720</td>
<td>3,685</td>
<td>965</td>
<td>19.95</td>
</tr>
<tr>
<td>Craftwomen, forewomen</td>
<td>135</td>
<td>253</td>
<td>118</td>
<td>2.44</td>
</tr>
<tr>
<td>Operatives</td>
<td>2,452</td>
<td>3,287</td>
<td>835</td>
<td>17.27</td>
</tr>
<tr>
<td>Laborers</td>
<td>133</td>
<td>145</td>
<td>12</td>
<td>0.25</td>
</tr>
<tr>
<td>Service workers</td>
<td>3,699</td>
<td>3,532</td>
<td>−167</td>
<td>−3.45</td>
</tr>
<tr>
<td>Farm workers</td>
<td>508</td>
<td>601</td>
<td>93</td>
<td>1.92</td>
</tr>
</tbody>
</table>

frequent during World War II as in World War I, but in the early summer of 1943, a violent outburst near Detroit left 25 African Americans and 9 whites dead.

One of the worst examples of racial bigotry occurred in 1942. Some 110,000 Japanese Americans (75,000 of them citizens) were forced to leave their homes on the West Coast and were placed in internment camps until 1945. Many were forced to sell farms and other businesses at “fire-sale” prices, thus being deprived of property built up over decades. Meanwhile, Japanese Americans distinguished themselves in the armed forces, fighting valiantly on the Italian front and serving as interpreters and translators in the Pacific theater. In 1988, Congress formally apologized and granted each of the survivors of the internment $20,000 as compensation.

AGRICULTURE DURING THE WAR

As demand expanded, agricultural production, aided by exceptionally good weather, climbed at the remarkable rate of 5 percent per year. This figure may be compared with the average during World War I, when agricultural production increased at 1.7 percent per year. Price controls during the war were purposely made less effective for agricultural than for nonagricultural commodities; consequently, the prices of farm products rose more rapidly during the war than the prices of the things that farmers had to buy.

During 1942, emphasis was placed on the necessity of stimulating particular kinds of output, notably meats and the oil-bearing crops, and avoiding a repetition of the price collapse that followed World War I. Legislation of October 1942 set final policy for the war period and for two postwar years. The 1942 act provided minimum support rates of 90 percent of parity for basic commodities; the supports were to remain in effect for two full years, beginning with the first day of January following the official end of the war. Price ceilings on farm products were set at a maximum of 110 percent of parity.

Cotton supports, however, were set at 92.5 percent of parity. Draft exemptions were provided for workers producing long-fiber cotton, which was demanded for a number of war-related uses (Maines 1993). The secretary of agriculture, at his discretion, could leave wheat and corn supports at 85 percent of parity if he felt that higher prices would limit available quantities of livestock feed. It is not entirely beside the point to note that cotton and beef interests were strongly represented by congressmen, some of whom had reached powerful positions through their seniority.

Over the war period and during the first two postwar years, price supports were not generally required. Because of the great demand for most products, agricultural prices tended to push against their ceilings. For some meats and dairy products, it was even necessary to roll back retail prices in an effort to “hold the line” against inflation. In such cases, to prevent a reduction in the floor prices received by farmers, meatpackers and creameries were paid a subsidy equal to the amount of the rollback on each unit sold.

The war enabled the Commodity Credit Corporation (CCC) to unload heavy inventories that had built up between 1939 and 1941. From 1944 to 1946, loans extended by the CCC were small. Foreign demand through the United Nations Relief and Rehabilitation Administration and military governments and an unexpectedly high domestic demand led to highly favorable postwar prices and tightened CCC loan and purchase commitments. Indeed, contrary to the predictions of many experts, the demand for food, feed, and fiber was exceptionally high after the war. The removal of price controls in the summer of 1946 permitted all prices to shoot up, but the rise in agricultural prices was steeper than the price rise in other areas. Most production restrictions on crops were
canceled before or during World War II, and by the spring of 1948, only tobacco and potatoes were still controlled.

DEMOBILIZATION AND RECONVERSION

Would the Depression Return?
The Great Depression was widely expected to return once the war was over. After all, it seemed as if the enormous level of government spending during the war was the only thing that had gotten the country out of the Depression; cut spending and the economy would sink back into depression. Many, perhaps most, economists agreed with this analysis. Economists and policy makers therefore pressed for a commitment by the government to maintain the high level of employment after the war. The result was the Employment Act of 1946.

According to the act, the federal government’s responsibility was to “promote maximum employment, production and purchasing power.” The adjective maximum was purposely ambiguous, but the entire statement was generally understood to mean that the government would act quickly to shore up the economy if a severe recession threatened. The Council of Economic Advisers, with an adequate professional staff, was added to the Executive Office of the President. The president, assisted by the council, was directed to submit to Congress at least annually a report on current economic conditions, with recommendations for legislative action. The statute further provided that the House and the Senate were to form a standing Joint Economic Committee, which would study the report of the president and the Council of Economic Advisers, hold hearings, and report, in turn, to Congress. Although no “investment fund” was provided to make up for shortfalls in private spending when unemployment was high as many liberal economists had hoped, a watchdog agency was established to keep Congress and the president systematically informed about economic conditions. A compromise piece of legislation, the act acknowledged the government’s role in maintaining full employment but did not say how the government would prevent depressions.

The expected depression did not materialize. During the war, people had accumulated large stores of financial assets, especially money and government bonds. They did so partly because they could not buy consumer durables during the war and partly because they were saving for the bad times they thought lay ahead. Once the war was over, these savings created a surge in demand that contributed to a postwar rise in prices and to the reintegration of workers from the armed forces and from defense industries into the peacetime labor force.

The GI Bill of Rights
Government policy also played a role in smoothing the transition of servicemen into the workforce. The so-called GI Bill of Rights provided returning servicemen a number of benefits, including financial aid for veterans returning to school. This legislation delayed the reentry of many former servicemen into the labor force and provided them with improved skills.

Planning for veterans started in a serious way when President Roosevelt appointed the Postwar Manpower Committee, which issued a report in June 1943 recommending a generous package of benefits for veterans. Pushed by the Veterans of Foreign Wars and the American Legion, Congress was also inclined to be generous for a number of reasons beyond the simple gratitude that Americans felt toward the people who had sacrificed to
defend them. There was a general perception that demobilization had gone badly after World War I and that veterans had not been treated well. There were also the examples of generous veterans' packages emphasizing education that had been provided by Wisconsin after World War I and by Canada during World War II. Finally, there was the fear that the depression would return after the war and that, without an adequate package of veterans benefits, returning servicemen and -women would go straight from "the battle lines to the bread lines." The resulting legislation, the Servicemen's Readjustment Act of 1943, has generally been known since by its popular name: the GI Bill of Rights. The GI Bill provided a wide range of benefits, including mustering-out pay; health care; assistance with job placement; low-interest loans to buy a home, farm, or business; unemployment benefits; reemployment rights; employment preferences; and education benefits.

The GI Bill's education provisions have been considered the most revolutionary parts of the legislation. Among other education benefits, the GI Bill provided money for tuition, fees, and living expenses for veterans enrolling in colleges and universities. Partly as a result of the GI Bill, enrollment in higher education boomed after the war. The peak year in terms of the influence of the original GI Bill was 1947, when about 1.7 million veterans were enrolled in college, making up 71 percent of the student body. (The Vietnam Era peak in 1977 was about 2 million.) The GI Bill cannot be given all the credit for increasing the percentage of young Americans attending colleges and universities in the postwar period. Enrollment continued to grow, and the percentage of young people attending colleges and universities continued to rise long after the veterans of World War II had moved on. The emphasis on higher education was a natural outgrowth of the high school movement that had occurred earlier in the century. The GI Bill, however, did play a role in jump-starting the postwar expansion of higher education. It demonstrated that Americans from all sorts of backgrounds could succeed on the college campus. It also transformed many colleges and universities. Rutgers, now the State University of New Jersey, for example, had to hire professors and learn to "mass-produce" education, to accommodate the veterans.

**Birth of the Consumer Society**

The postwar surge in demand ushered in a new consumer-oriented society that to some Americans represented the fulfillment of the American dream and to others the creation of an unthinking, materialistic culture. Builders such as Levitt and Sons adapted mass-production techniques developed during the war to provide housing for war workers, to mass-produce suburban homes, even creating entire new communities such as Levittown, New York. Aided by advances from the Federal Housing Administration and the Veterans Administration, the Levitts offered attractive terms to returning servicemen and other buyers.

Balladeer Malvina Reynolds expressed the feelings of many critics of the new "tract" housing in a popular folksong:

*Little Boxes on the hillside, little boxes made of ticky tacky,*
*Little Boxes on the hillside, little boxes all the same.*
*There's a green one and a pink one and a blue one and a yellow one,*
*And they're all made of ticky tacky and they all look just the same.* (Reynolds 1983, 378–380)

Defenders of the new construction techniques argued that by achieving the economies of long production runs, builders were able to lower the unit cost of housing and permit people to buy homes who otherwise could not afford them. No one, however, was able to
put that into an enduring folksong. These years witnessed the beginning of the “baby boom” as birthrates surged in the late 1940s and 1950s. The image of a baby boom following shortly after the reuniting of soldiers with their loved ones is romantic and undoubtedly valid in many individual cases, but the baby boom was a much broader phenomenon that continued into and peaked in the late 1950s. In fact, this unusual deviation from the long-term trend toward smaller families (Haines 1994) may be due to the development of a range of labor-saving devices for the home that lowered the costs of having children (Greenwood, Seshadri, and Vandenbroucke 2005).

The war, in short, ushered in a period in which millions of Americans could take part for the first time in a middle-class lifestyle. Government programs for veterans such as the GI Bill helped, but the key factor was the thing that did not happen—a return to the depressed economic conditions of the 1930s.

SELECTED REFERENCES AND SUGGESTED READINGS


