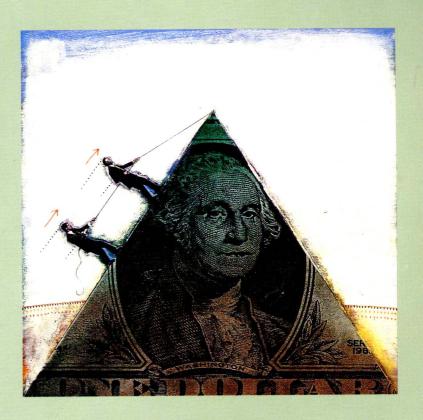
ECONOMICS OF SOCIAL ISSUES

Eleventh Edition



SHARP REGISTER LEFTWICH

Economics of Social Issues

Ansel M. Sharp

Frank Wawilson Professor of Political Economy The University of the South

Charles A. Register Mississippi State University

Richard H. Leftwich: Leftwich Associates

Eleventh Edition

IRWIN

Burr Ridge, Illinois-Boston, Massachusefts Sydney, Australia



This symbol indicates that the paper in this book is made of recycled paper. Its fiber content exceeds the recommended minimum of 50% waste paper fibers as specified by the EPA.

Cover illustration: David Lesh

© RICHARD D. IRWIN, INC., 1974, 1976, 1978, 1980, 1982, 1984, 1986, 1988, 1990, 1992, and 1994

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher.

Senior sponsoring editor: Gary Nelson Developmental editor: Ellen Cleary Marketing manager: Ron Bloecher

Project editor: Ethel Shiell

Production manager: Ann Cassady
Cover designer: Laura K. Gunther
Art coordinator: Heather Burbridge
Art studio: Electronic Publishing Service, Inc.

Compositor: The Clarinda Company

Typeface: 10/12 Palatino

Printer: R. R. Donnelley & Sons Company

Library of Congress Cataloging-in-Publication Data

Sharp, Ansel Miree, date

Economics of social issues / Ansel M. Sharp, Charles A. Register, Richard H. Leftwich. —11th ed.

p. cm. — (The Irwin series in economics) Includes index.

ISBN 0-256-13751-X

1. Economics. 2. Social problems. I. Register, Charles A.

II. Leftwich, Richard H. III. Title. IV. Series.

HB171.5.S5498 1994

330-dc20

93-8382

Printed in the United States of America
1 2 3 4 5 6 7 8 9 0 DOC 0 9 8 7 6 5 4 3

Preface

The objectives and the orientation of the eleventh edition of *Economics of Social Issues* remain the same as in previous editions. Our objectives are to (1) create student interest in the study of economics and (2) provide a framework of basic analytical tools useful in the analysis of social problems. To reach these objectives, we first introduce and discuss an issue. Next, we develop the economic concepts and principles germane to the issue and then apply these principles to the issue in order to discover if there are ways in which they can help us resolve it. The arrangement of the issues in the book is planned to provide a logical development of basic economic concepts and to reinforce understanding of these concepts through repeated use and application. As always, we are concerned about the timeliness of our issues and their usefulness in helping students learn the important basic principles of economics.

New Features

There are numerous changes in this edition of our book. The most significant is the new chapter on the economics of professional sports. This chapter was authored by Paul W. Grimes of Mississippi State University. Paul also made helpful suggestions for the rest of the text as well. Throughout the text, we have converted, where possible, to the use of the term gross domestic product and included a discussion of it and how it differs from gross national product in Chapter 1. In this edition, we have moved the discussion of the price eleasticity of demand from Chapter 2 to Chapter 3. Chapter 3, with its emphasis on the economics of higher education, provides a natural application for the elasticity material. Specifically, in addition to discussing the economic implications of differential tuition based on differences in demand, we now are able to consider differential tuition based on relative demand elasticities and its impact on revenues. Given the general stability of the world oil market, the previous edition's chapter on energy problems has been omitted. We have added discussions of proposed health care reforms such as managed competition in Chapter 10. Chapter 13 now includes a discussion of the macroeconomy in the early 1990s and considers the need for a stimulus package as proposed by President Clinton. A new section in Chapter 15 introduces President Clinton's proposed tax changes. This includes a discussion of both the changes to deal with deficit problems and universal health insurance. Chapter 16 now contains a discussion of the federal budget deficit. As always, the data are thoroughly updated as are the citations and examples, where appropriate.

We would like to express our thanks to the many users who have taken time to send us their comments and to the reviewers who have provided us with detailed comments and suggestions to improve previous editions. Many of the new features of this edition are based on the suggestions that have been made to us in conversation or in writ-

ing by the following users or reviewers of our book:

John Altazen, University of New Orleans; Michael W. Babcock, Kansas State University; Walter Baumgartner, SUNY-Oneonta State College; David Blanchard, University of Wisconsin-Oshkosh; Basil Cooil, Tompkins Cortland Community College; Harry L. Cook, Southern Oregon State College; Edward J. Deak, Fairfield University; James H. Dukes, University of West Florida; Allen Early, West Texas State College; James Gapinski, Florida State University; David E. R. Gay, University of Arkansas; George H. Hand, Southern Illinois University; Sydney Hicks, Interfirst Bank of Dallas; Doug Hodo, University of Texas-San Antonio; William W. Howard, Phoenix College; John Jambura, Eastern Oregon State College; Barry Krissoff, Western Michigan University; Howard D. Leftwich, Oklahoma Christian College; E. Victor Maafo, North Carolina Central University; Thomas McCann, Northeastern Louisiana University; James McLain, University of New Orleans; Douglas McNeil, McNeese State University; Jim Mangum, Louisiana Tech University; James Marsden, University of Kentucky; Charles Meyerding, Inver Hills Community College; Thomas M. Mitchell, Southern Illinois University at Carbondale; Jeff Moore, University of Houston; Clair E. Morris, United States Naval Academy; Roland Mullins, Arkansas State University; Dave Nagao, Sacramento City College; Ken Nair, West Virginia Wesleyan University; John Neal, Lake-Sumter Community College; Thomas Parsons, Massachusetts Bay Community College; Michael Sattinger, SUNY at Albany; Harold M. Seeberger, Heidelbert College; Robert Smith, Louisiana State University; Gary L. Stone, Winthrop College; Philip F. Warnken, University of Missouri; and Shiu-fang Yu, Texas State University.

We would also like to thank Patty Moran and Reneé Couto for editorial advice and assistance. We, however, are responsible for errors of fact and theory.

> Ansel M. Sharp Charles A. Register Richard H. Leftwich

Contents

Introduction 1

1. Human Misery: The Most Important Issue of Them All 2

World Poverty and Economics 3

Our Insatiable Wants.

Our Limited Means.

The Capacity of the Economy to Produce. Living Standards.

Causes of Poverty and the Requisites of Economic Growth 11

Quality of the Labor Force.

Stock of Capital and Capital Accumulation.

Technology.

Efficiency.

Population.

Have We Painted Too Rosy a Scenario? 16

The Distribution of GDP.

Can Governments Help? 19

Governments of LDCs. Governments of DCs.

Summary 22

Part One

Resource Allocation 25

2. Government Control of Prices: Do the Poor Benefit? 26

Why Do Governments Control

Prices? 28

Price Floors.
Price Ceilings.

Some Useful Economic Concepts 30

Market Structure.

Demand.

Changes in the Quantity Demanded versus Changes in Demand.

Supply.

Changes in the Quantity Supplied versus Changes in Supply.

Competitive Market Price Determination. Changes in Equilibrium: Putting It All Together.

Economic Analysis of Price Floors 48 *Labor Markets*.

Economic Analysis of Price Ceilings 59

Housing Markets.

Summary and Evaluation 64

Economics of Higher Education: Who Benefits and Who Pays the Bills? 66

Problems in Higher Education 67

What Kinds of Services? How Much Service? What Institutional Structure?

Who Should Pay?

The Economic Basis of the Problems.

The "Product" of Higher Education 70

Investment in Human Capital.

Direct Consumption.

Social Spillovers.

The Incidence of the Benefits.

Economic Concept of Costs 73

The Opportunity Cost Principle Revisited. Explicit and Implicit Costs.

The Costs of Higher Educational Services 75

The Explicit Costs.
The Implicit Costs.

Sources of Support.

The Incidence of the Costs.

Economic Evaluation of the Problems 79

What Kinds of Services? How Much Service? Who Should Pay? An Alternative Institutional Structure.

Summary 94

4. Economics of Crime and Its Prevention: How Much Is Too Much? 98

What Is Crime? 99

Immorality?
Illegality?
Classification of Criminal Acts.
Causes of Crime.

The Costs of Crime 102 Individually and Collectively Consumed Goods 104

Individually Consumed Goods.
Collectively Consumed Goods.
Semicollectively Consumed Goods.
The "Free Rider" Problem.
Government Production of Collectively Consumed Items.

The Economics of Crime Prevention Activities 107

The "Correct" Level.

Allocation of the Crime Prevention Budget.

Changing the Legal Status of Goods and

Services.

Summary 114

5. Pollution Problems: Must We Foul Our Own Nests? 118

What Is Pollution? 120

The Environment and Its Services. Recycling of Wastes and the Concept of Pollution.

Common Forms of Pollution.

Economics of Pollution 124

Why Polluters Pollute.
Pollution and Resource Use.
The Costs of Controlling Pollution.

The Benefits of Controlling Pollution. The Appropriate Level of Pollution Control.

What Can Be Done about Pollution? 133

Direct Controls. Indirect Controls. Private Property Rights.

Summary 138

6. The Economics of Big Business: Who Does What to Whom? 140

The Public View of Big Businesses 141 The Economics of Monopoly Power 142

> What Is Monopoly Power? Outputs and Prices. Entry Restrictions. Nonprice Competition.

Should We Fear Bigness? 156

Bigness and Monopoly Power. Outputs and Prices. Entry Restrictions and Resource Allocation. Nonprice Competition. Income Distribution.

Summary 160

7. Airline Regulation and Deregulation: Who Gains from Regulation? 162

The Problems of Regulation and the Promise of Deregulation 163 When Should Government Regulate Business? 164

Natural Monopoly. Deficient Information. Poorly Defined Property Rights.

The History of Airline Regulation and Deregulation 171

The CAB and FAA.

Airline Industry Performance: The Impact of Deregulation 173

Fares. Availability of Service. Safety Concerns.

ix

Airline Regulation: What Went Wrong? 178

Was Airline Regulation Economically **Justified?**

The Capture Theory of Regulation.

What the Future Holds 182

Future Safety Concerns. Increasing Concentration.

Summary 184

8. The Economics of Professional Sports: What Is the Real Score? 188

The Professional Sports Business 189

Organizational Structure.

Teams and Players.

Economic Analysis and Professional Sports.

The Product Market 192

Cooperation between Teams.

Cartels.

Coordinated Behavior.

Pricing and Output for Broadcast Rights.

The Resource Market 199

The Employment of Players.

Monopsony.

Wages and Employment in a Monopsony. Free Agency.

Do Professional Athletes Earn Their Pay?

Summary 206

Protectionism versus Free Trade: Can We Restrict Ourselves into Prosperity? 208

The Controversy over International Trade 210

The Protectionist Viewpoint. The Free Trade Viewpoint.

The Economics of International Trade 211

How Trade Takes Place. Production and Consumption Possibilities. The Principle of Comparative Advantage. How International Trade Is Financed.

Analysis of the Controversy 221

Protection from Cheap Foreign Goods.

Payments Problems. Protection of Key Industries. Summary 225

10. Health Issues: Is It Worth What It Costs? 228

Growth and Nature of Health Services 230

National Health Care Dollars—Where They Came from and Where They Went. Factors Explaining the Growth in Expenditures for Personal Health Care

Special Characteristics of Health Services.

Health Care Problems 236

The Public View.

The Economist's View.

Analysis of Demand for Health Services 237

Price Elasticity of Demand. Factors Changing the Demand for Health Services.

Analysis of Supply of Health Services 242

Supply Characteristics: Physicians. Supply Characteristics: Hospitals. Factors Affecting the Supply of Hospital Services.

Evaluation of the U.S. Health Care System 244

Reforms in the Distribution of Health Care Services.

Reducing Entry Barriers. Increasing Efficiency.

National Health Insurance 249

Basic Issues.

Alternative Proposals to National Health Insurance.

A Final Look at Rising Health Care Costs 253

Supply Approach. Demand Approach. Reform in the Payment and Delivery System.

Fundamental Health Care Reform: Managed Competition 257 Summary 259

Part Two

Distribution of Income 263

11. Poverty Problems: Is Poverty Necessary? 264

Poverty in Terms of Absolute Income Levels 265

What Is Poverty? Who Are the Poor? The Upward Struggle of the Poor.

Poverty in Terms of Income Distribution 269

Income Equality.
Income Inequality.

The Economic Causes of Poverty 271

Determinants of Resource Prices and Employment.

Determination of Individual or Family Income.

Determinants of Income Distribution.

Causes of Differences in Labor Resource
Ownership.

Causes of Differences in Capital Resource Ownership.

Summary of the Causes of Poverty.

Government Attempts to Alleviate Poverty 275

Government Programs Primarily for the Poor.

Real Growth and Relative Importance of Low-Income Programs.

Evaluation of Low-Income Programs.

Negative Income Tax Proposals 280

The Negative Income Tax.
Evaluation of the Negative Income Tax
Scheme.

Summary 282

12. Discrimination: The High Cost of Prejudice 286

What Is Discrimination? 287

The Public View.
A Working Definition.

Economic Analysis of Discrimination 288

Sources of Market Discrimination. Kinds of Market Discrimination. Economic Costs of Discrimination.

Nonmarket Discrimination 294

Social Discrimination.

Educational Discrimination.

What Can Be Done about

What Can Be Done about Discrimination? 296

Reduce Tastes for Discrimination.
Reduce Market Imperfections.
Reduce Discrimination in Development of
Human Capital.
Reduce Occupational Segregation.

The Comparable Worth Controversy 299

Proponents.
Opponents.

Comparable Worth: A Definitive Conclusion?

Summary 301

Part Three

Stabilization 303

13. Unemployment Issues: Why Do We Waste Our Labor Resources? 304

Some Effects of Unemployment 305

Effects on GNP.

Effects on Social Relations.

What Is Unemployment? 306

General Definition. Involuntary Unemployment.

Analysis of the Unemployment Problem 308

Types of Unemployment.
Further Dimensions of the Unemployment
Problem.

What Causes People to Lose Their Jobs? 312

Circular Flow of Economic Activity.

Aggregate Demand. Aggregate Supply. Aggregate Demand and Supply. Reasons for Deficient Aggregate Demand. Reasons for Weak Aggregate Supply.

Combating Unemployment 323

Aggregate Demand Policies. Aggregate Supply Policies and the Economy

in the 1980s. Beginning of the Decade of the 90s:

Summary 327

14. Inflation: How to Gain and Lose at the Same Time 330

Recession and Recovery.

Meaning and Measurement of Inflation 332

Inflation Defined. Further Aspects of Inflation. Measurement of Inflation. Rate of Inflation.

Economic Effects of Inflation 335

Equity Effects. Efficiency Effects. Output Effects.

What Is Money? 338

Functions of Money. The Money Supply (M1 and M2).

The Process of Creating Money 341

Commercial Banks. Other Depository Institutions. Balance Sheet of a Bank. The Fractional Reserve Banking System. Demand Deposit Creation.

The Issue of Control 345

The Federal Reserve System. Federal Reserve Controls. Federal Reserve Targets.

Inflationary Causes and Cures 348

Quantity Theory of Money. Demand-Pull Inflation. Cures for Demand-Pull Inflation. Cost-Push Inflation. Demand-Pull and Then Cost-Push Inflation. Is There a Cure for Cost-Push Inflation?

Summary 355

Appendix: A Note on the Banking

Industry 356

Part Four The Public Sector 359

15. Government Expenditure and Tax Issues: Who Wins and Who Loses? 360

What Are People Afraid Of? 361

Size of Government. Tax Inequities.

The Problem of Size 363

Government Expenditures. Government Receipts.

Economic Analysis of the Problem of Size 365

An Efficient Level of Government Expenditures. Collective Goods and Services. External Benefits and Costs. Income Distribution. Summary.

Tax Principles and Analysis 370

Tax Equity. Tax Efficiency. Principles of Shifting and Incidence.

Who Really Pays Taxes? 375

Tax Incidence of the American Tax System. Federal Tax Incidence versus State and Local Tax Incidence. Tax Rates by Type of Tax. Conclusions.

Income Tax Reform: A Dream Come True 378

Income Tax Rates and Tax Base under Tax

Who Gains under Tax Reform?

Tax Increases in 1991 382 President Clinton's Proposed Tax Increases 384

Tax Increases to Reduce the Deficit.

Tax Increases and Universal Health Coverage.

Summary 386

16. The Big National Debt: Is It Bad? 390

The Course of the National Debt 391 The Growth in the Federal Debt Held by the Public 392

The Absolute Growth in the Federal Debt Held by the Public.

Public-Held Federal Debt as a Percent of the GDP.

Federal Debt Held by the Public as a Percent of Total Credit Market Debt.

What Is the National Debt? 396

Types of Federal Securities.
Who Owns the National Debt?

Problems with a Large National Debt 398

The Views of the Public. The Concern of Economists. Summary in Regard to National Debt Problems.

Economic Analysis of National Debt Financing 401

Methods of Finance.

Economic Effects of Government Debt
Financing.

Differing Effects of Tax and Debt
Financing.

Managing a Large National Debt 405

Debt Management Policy.

Debt Management Principles.

When Should the Government Borrow? 407

Public Investments.
Economic Instability.
Is Government Debt Accumulation
Necessary during Wartime?
A Budget Proposal.

A Final Look at the Deficit Issue 410 Summary 411

Glossary 414

Index 427

Introduction

Chapter 1

Human Misery

The Most Important Issue of Them All

Human Misery

World Poverty and Economics

Our Insatiable Wants Our Limited Means

The Capacity of the Economy to **Produce**

Living Standards

Causes of Poverty and the Requisites of

Economic Growth

Quality of the Labor Force

Checklist of **Economic Concepts**

Labor resources

Capital resources

Technology

Production

Opportunity costs

Opportunity cost principle

Gross national product

Gross domestic product, current

dollar

Gross domestic product, real

Stock of Capital and Capital

Accumulation

Technology

Efficiency

Population

Have We Painted Too Rosy a Scenario?

The Distribution of GDP

Can Governments Help?

Governments of LDCs

Governments of DCs

Summary

Gross domestic product, per

Production possibilities curve

Living standards

Price index numbers

Efficiency

Lesser developed countries

Developed countries

Social overhead capital

"I can't stand up," mutters Yussef Sheik Hussein, ignoring the swirl of flies attracted to a half-dozen dying Somalis nearby. "Do you have some medicine?" Hussein's emaciated body seems disconnected from his chiseled, intelligent face. But his eyes and memories are clear: His 75-acre farm was overrun by marauding gunmen a year ago; six sons and one daughter are all dead now. "Some were killed in fighting, and the smallest died of hunger." Without the needed medicine, his own fate is painfully clear. Beyond his hospital window, one of the morning's many dead is loaded on a donkey cart and led away.

Outsiders peer into such tortured lives feeling like ghoulish voyeurs. The initial impulse is to turn away. What, after all, can be done for people living in hell? Skeletal figures wander the thorny landscape in search of food, sometimes taking shelter in abandoned government buildings stripped bare by looters. Starvation has already claimed 100,000 lives and more than a million others could follow.¹

World Poverty and Economics

Some two thirds of the world's population go to sleep hungry at night. The World Bank estimates that perhaps as much as one quarter of the world survives on no more than \$1 per day. Outright famine regularly occurs in various parts of the world—recent examples being the mass starvation of an estimated 1 million people in Ethiopia during the drought of 1984-85 and the contemporary tragedy of perhaps even greater proportions in Somalia. Most of the hungry have no protection from the summer's heat or the winter's cold. They receive little or no medical care and live in unsanitary surroundings. Infant mortality is high and life expectancy is low. While in the United States 9 infants die before reaching their first birthday out of each 1,000 live births, the rate explodes to well over 1 in 10 in places such as Ethiopia, Pakistan, and Tanzania. At the opposite end of life, the typical Ethiopian can expect to die about 30 years earlier than his or her contemporary in the United States. Recognition that the misery of poverty is the lot of the largest part of the world's population leads us to ask the questions: Why is it so? What are the causes? How can it be alleviated? This in turn leads us directly into the province of economics. An assessment

¹Jeffrey Bartholet, "The Road to Hell," *Newsweek*, September 21, 1992, pp. 53−57. © 1992, Newsweek, Inc. All rights reserved. Reprinted by permission.

and analysis of poverty problems require an explicit understanding of the very foundations of economic activity. In this section, we sketch out its fundamental aspects.

Our Insatiable Wants

Economic activity springs from human wants and desires. Human beings want the things necessary to keep them alive—food and protection from the elements of nature. We usually want a great many other things, too, and the fulfillment of these wants and desires is the end toward which economic activity is directed.

As nearly as we can tell, human wants in the aggregate are unlimited or insatiable. This is true because once our basic needs are met, we desire variety in the way they are met—variety in foods, in housing, in clothing, and in entertainment. Additionally, as we look around, we see other people enjoying things that we do not have (digital audio equipment and home computers, for example), and we think that our level of well-being would be higher if we had those things, too. But most important, want-satisfying activity itself generates new wants. A new house generates wants for new furnishings—the old ones look shabby in the new setting. A college or university education opens the doors to wants that would never have existed if we had stayed on the farm or in the machine shop. To be sure, any one of us can saturate ourselves—temporarily, at least—with any one kind of good or service (like ice cream or beer), but almost all of us would like to have more than we have of almost everything and higher qualities of purchases than we now can obtain.

Our Limited Means

The fundamental economic problem is that the means available for satisfying wants are *scarce* or limited relative to the extent of the wants. The amounts and qualities of goods and services per year that an economic system can produce are limited because (1) the resources available to produce them cannot be increased by any great amount in any given year and (2) the technology available for production is subject to a limited degree of annual improvement.

An economy's *resources* are the ingredients that go into the making of goods (like automobiles) and services (like physical examinations). Production is similar to cooking. Resources (ingredients) are brought together; technology is used to process these resources in certain ways (mixing and cooking them), and finally a good or service results (a cake, perhaps). Some outputs of production processes are used directly to satisfy wants. Others become inputs for additional production processes. The resources available in an economy are usually divided into two broad classifications: (1) labor and (2) capital.

Labor resources refer to the physical and mental efforts of an economy's people that are available to produce goods and ser-

Capital resources refer to all the nonhuman ingredients of production such as land, buildings, machinery and equipment, and semifinished materi-

Technology refers to the know-how and the means and methods of production available within an economy.

Gross domestic product (GDP) measures the market value of all final goods and services produced within an economy during one year. GDP ignores the issue of whether the resources used for the production are domestically or foreign owned.

Gross national product (GNP) measures the market value of all final goods and services produced by domestically owned resources during one year regardless of where the production takes place.

Labor resources consist of all the efforts of mind and muscle that can be used in production processes. The ditch digger's output along with that of the heart surgeon and the university professor is included. There are many kinds and grades of labor resources; their main common characteristic is that they are human.

Capital resources consist of all the nonhuman ingredients that go into the production of goods and services. They include land that provides space for production facilities, elements that enable it to grow crops, and many useful mineral deposits. They also include buildings and equipment that have been built up over time, along with the economy's stock of tools. In addition, all of the raw and semifinished materials that exist in the economy at any given time and that are available for use in production are capital resources. Sheets of steel and grocery store inventories are examples of semifinished materials.

Resources are always scarce relative to the sum total of human wants. Consider the U.S. economy. The U.S. population is about 250 million. Most U.S. citizens want more things than they now have. Can the economy increase next year's production enough to fulfill all of these wants? Obviously not. The labor force available from the present population cannot be increased substantially in either quantity or quality very quickly. Both may be increased over time by increasing the size of the population and through improving the education and training of the general population, but this increases total wants, too. The stocks of buildings, machines, tools, raw and semifinished materials, and usable land are not susceptible to rapid increases either; instead they are accumulated slowly over time.

Technology refers to the known means and methods available for combining resources to produce goods and services. Given the quantities of an economy's labor and capital resources, the better its technology, the greater is the annual volume of goods and services it can turn out. Usually improvements in technology in an economic system result from increasing the scope and depth of its educational processes and from an ample supply of capital that provides a laboratory for experimentation, practice, and the generation of new ideas.

The Capacity of the Economy to Produce

Gross Domestic Product and Gross National Product. Given the fundamental problem of scarcity that all societies face, it is essential that we be able to track how well a particular economy translates labor and capital resources into goods and services. In general terms, we wish to be able to quantify the total dollar value of all final goods and services produced. Two measures of the value of production are commonly employed: gross domestic product, or GDP, and gross national product, abbreviated as GNP.

While not identical, each measures the economy's annual output of final goods and services. The difference between the two measures is best understood by considering two related questions. When Toyota produces its popular Camry in Georgetown, Kentucky, should such production be considered part of U.S. output? Conversely, when Chevrolet builds its popular Camaro in Canada, should this production be part of U.S. output? The answer to each question is the same; "yes" and "no" depending on whether one is considering GDP or GNP. If the focus is on GDP, it makes no difference who owns the production facilities; if the production takes place in the United States, it is counted towards U.S. output. Thus, GDP includes the value of the Camrys produced in Kentucky and excludes the value of the Canadianbuilt Camaros. On the other hand, GNP focuses on the output derived from domestically owned resources and, consequently, would include the value of the Camaros but not that of the Camrys. Put simply then, GDP measures the market value of the annual output of final goods and services produced within an economy, while GNP measures the market value of the annual output of final goods and services produced using domestically owned resources. Given this difference, during any particular year GDP may be greater than, less than, or equal to GNP. While each is a valid measure of national production, we will follow, where possible, the U.S. government's convention and employ GDP as our measure of production.

Production Possibilities. Given an economy's available stocks of resources and its level of technology, there are any number of combinations of goods and services that can compose its GDP. For simplicity, suppose that it produces only two items—bread and milk—and that all of its resources are devoted to the production of these two products. The curve *AE* in Figure 1–1 represents all possible combinations of bread and milk that can be produced. It is appropriately called the economy's *production possibilities curve*. Thus, GDP may consist of 100,000 loaves of bread per year with no milk as shown by point *A*, or 100,000 quarts of milk per year with no bread as shown by point *E*. Or it may consist of any combination on the curve, such as *B*, containing 90,000 loaves of bread and 40,000 quarts of milk; or *C*, containing 50,000 loaves of bread and 80,000 quarts of milk; or some combination under the curve such as *F*, containing 50,000 loaves of bread and 40,000 quarts of milk.

If an economy's GDP is some combination of goods and services like F, which lies below its production possibilities curve, the economic system is not operating efficiently. Some of its resources may be unemployed, used in the wrong places, or wasted. It also may not be using the best available techniques of production.

Combinations of goods and services, like *G*, lying above the production possibilities curve, are not currently attainable. The economy

The production possibilities curve represents the maximum quantities of two goods and/or services that an economy can produce when its resources are used in the most efficient way possible.