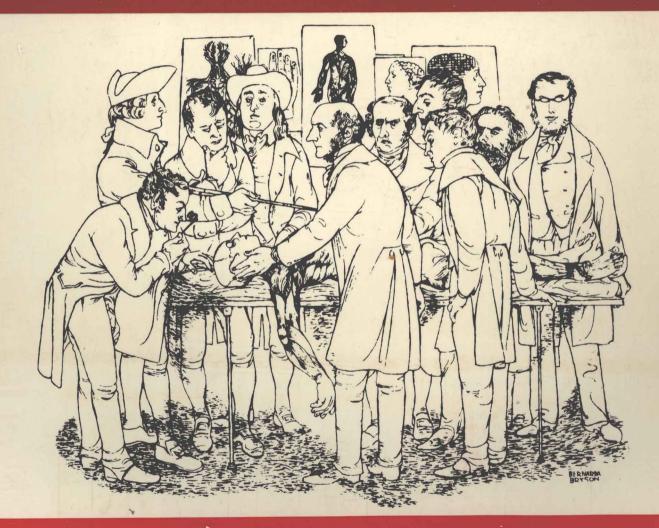
# Understanding Microeconomics

FIFTH EDITION



**HEILBRONER and THUROW** 

# Understanding Microeconomics

ROBERT L. HEILBRONER

LESTER C. THUROW

Fifth Edition

PRENTICE-HALL, INC., Englewood Cliffs, NJ 07632

#### Library of Congress Cataloging in Publication Data

Heilbroner, Robert L Understanding microeconomics.

1. Microeconomics. I. Thurow, Lester C., joint author. II. Title HB172.H44 338.5 80-23005 ISBN 0-13-936567-2

## UNDERSTANDING MICROECONOMICS, 5th edition by Robert L. Heilbroner and Lester C. Thurow

- © 1981, 1978, 1975, by Prentice-Hall, Inc., Englewood Cliffs, N.J. 07632
- © 1972, 1968, by Robert L. Heilbroner

All rights reserved. No part of this book may be reproduced in any form or by any means without permission in writing from the publisher. Printed in the United States of America.

10 9 8 7 6 5 4 3 2 1

This is a Special Projects book.

Maurine Lewis, director

Susan Adkins, editor

Ray Keating, manufacturing buyer

Cover design by Olympia Shahbaz from drawings by Bernarda Bryson. Front cover drawing from "Economic Psychology" by George Katona, © 1954 by Scientific American, Inc. All rights reserved. Illustrations by Don Martinetti.

Prentice-Hall International, Inc., London
Prentice-Hall of Australia Pty. Limited, Sydney
Prentice-Hall of Canada, Ltd., Toronto
Prentice-Hall of India Private Limited, New Delhi
Prentice-Hall of Japan, Inc., Tokyo
Prentice-Hall of Southeast Asia Pte. Ltd., Singapore
Whitehall Books Limited, Wellington, New Zealand

### CONTENTS

#### PART I THE ECONOMIC BACKGROUND

#### 1 WHAT THIS BOOK IS ALL ABOUT • 3

What's in this book Micro itself STUDYING ECONOMICS Vocabulary Diagrams Key ideas Questions and extra words Analysis and abstraction

#### 2 THE EVOLUTION OF THE MARKET SYSTEM • 9

WHERE DID CAPITALISM COME FROM? Stereotypes of capitalism Before capitalism MARKET SOCIETY ERUPTS Market societies The factors of production The economic revolution Freedom and necessity THE UNLEASHING OF TECHNOLOGY Precapitalist technology Why technology slumbered The incentive of capitalism The industrial revolutions The effects of technology THE POLITICAL DIMENSION Political freedom Laissez-faire vs. political intervention

#### 3 A BIRD'S EYE VIEW OF THE ECONOMY • 26

BUSINESS Small business Big business The industrial sector Big employers HOUSEHOLDS The work force Occupations Distribution of income The poor The working class The rich and the upper class The middle class Wealth Middle-class wealth Millionaires GOVERNMENT Government as buyer and producer

#### PART 2 A KIT OF ECONOMIC TOOLS

#### 4 ECONOMIC SCIENCE • 44

Maximizing vs. constraints HYPOTHESES ABOUT BEHAVIOR Maximizing utilities Satiable and insatiable wants Rationality The economist's view of man HYPOTHESES ABOUT CONSTRAINTS Constraints of nature Opportunity cost Constraints and costs Constraints of society BASIC HYPOTHESES Economics as a social science

#### 5 SUPPLY AND DEMAND • 55

Prices and behavior DEMAND Taste and income Budgets Diminishing marginal utility Demand curves The puzzle of bread and diamonds SUPPLY Supply and demand Individual and collective supply and demand Balancing supply and demand EMERGENCE OF THE EQUILIBRIUM PRICE Interplay of supply and demand The market clears Characteristics of equilibrium prices Does "Demand equal supply"? The market clears Characteristics of equilibrium prices Does "Demand equal supply"? The role of competition Two necessary aspects of competition Maximizing subject to constraints

#### 6 SIX TOOLS YOU SHOULD KNOW HOW TO HANDLE • 69

- 1. Ceteris Paribus 2. Functional relationships 3. Identities 4. Schedules
- 5. Graphs 6. Equations Economic techniques reviewed Economic fallacies

#### PART 3 MICROECONOMICS: THE ANATOMY OF A MARKET SYSTEM

#### 7 INTRODUCTION TO THE MICROECONOMY • 84

THE MARKET SYSTEM Production Distribution Two kinds of markets Looking at the system as a whole

#### 8 PRICES AND ALLOCATION • 92

THE ALLOCATION PROBLEM Rationing How the market rations PRICE VS. NONPRICE RATIONING Market problems Shortages Price controls Surpluses When price rationing fails

#### 9 THE MARKET IN MOVEMENT • 105

SHIFTS IN DEMAND AND SUPPLY Shifts in curves vs. movements along curves Price changes Long and short run ELASTICITY The elasticity formula Elasticities and business fortune BEHIND ELASTICITIES OF DEMAND: SUBSTITUTION Marginal utility again Necessities and elasticity The importance of substitutes Complements Behavior and nature, again

#### 10 WHERE THE MARKET FAILS • 121

INFORMATION PROBLEMS The prevalence of ignorance MARKET INSTABILITY Cobwebs EXPECTATIONS AND INFLATION Perverse reactions Remedying information lacks PUBLIC GOODS Free riding Voting instead of buying Privatizing public goods? EXTERNALITIES Pollution "Bads" escape the market Marginal private and social costs CONTROLLING EXTERNALITIES 1. Regulation 2. Taxation 3. Subsidies Externalities in review Market strengths and weaknesses

#### 11 OPERATING A COMPETITIVE FIRM: A First Look • 135

ECONOMICS OF THE FIRM Entrepreneurship Economic profit THE TASKS OF THE ENTREPRENEUR Pure competition Pure competition and the entrepreneur HOW AN ENTREPRENEUR OPERATES Task No. 1: The decision on scale Task No. 2: Combining the factors Task No. 3: Determining the level of output End of the tour

#### 12 OPERATING A COMPETITIVE FIRM: A Second Look • 151

Fixed and variable costs Fixed costs per unit Variable costs and diminishing returns Marginal productivity Diminishing returns Total, average, and marginal product The law of variable proportions Variable costs per unit Total cost per unit The cost profile Average and marginal costs FROM COST TO REVENUE Average and marginal revenue Marginal costs and supply Profits Working out an example Entry and exit Minimizing losses Long-run equilibrium Quasi rents Sources of quasi rents

#### 13 OPERATING A BIG BUSINESS • 171

MOTIVES AND MARKETS Price takers vs. price makers "Pure" monopolies Limits of monopoly Advertising Cost curves for the monopolist FROM COST TO REVENUE Monopoly revenues Equilibrium for the monopoly Monopoly vs. competitive prices OLIGOPOLY Oligopoly cost and demand The fight for market shares The kinked demand curve Collusion and price leadership Excess capacity and price wars The drive for growth Growth within markets MNCs and conglomerates MONOPOLISTIC COMPETITION Equilibrium in monopolistic competition Social consequences

#### 14 THE COST OF MARKET IMPERFECTION • 191

CONSUMER SOVEREIGNTY Effect of advertising Is product differentiation a

good thing? Monopoly and inefficiency BUSINESS AND POWER A conservative view The corporation as social arbiter Dissolution of monopoly Antitrust Regulation Nationalization Other possibilities Power: the unresolved problem

#### 15 HOW INCOMES ARE DISTRIBUTED: In Theory • 209

Factors and factor services Direct demand for factors Derived demand THE SUPPLY CURVE OF FACTORS Labor Capital Land RENTS AND INCOMES Land rent Quasi or economic rent Rents and prices Economic rents and allocation Economic rents and incomes Capitalization Capitalization and economic rents MARKET PRICE FOR FACTORS The marginal productivity theory of distribution Price and productivity

#### 16 HOW INCOMES ARE DISTRIBUTED: In Fact • 228

RICH AND POOR Poverty Low wages Riches Property Instant wealth THE MIDDLE STRATA Some basic problems MARKET IMPERFECTIONS Ignorance and luck Monopolies Rents and discrimination Discrimination against blacks Discrimination against women Reference groups Uses of marginal productivity theory CHANGING INCOME DISTRIBUTION 1. Changing productivities 2. Intervening on the demand side of the market 3. Taxes and transfers Effectiveness of transfers Negative income tax Work incentives The problem of costs The political issue In review

#### PART 4 THE MAJOR ECONOMIC CHALLENGES

#### 17 TAXING AND SPENDING • 249

PROPOSITION 13 REVENUE U.S. vs. foreign taxes The American mood Tax levels vs. tax incidence Regressive, progressive, and proportional Tax incidence Effects of elasticity Complexity of incidence Regressivity of sales taxes Personal income taxes Progressivity of income taxes Effect of deductions Loss of progressivity Corporate income taxes Double taxation Social security taxes Property taxes Total incidence A proportional system Horizontal equity again Public spending The criterion of waste Voting The asymmetry of spending and taxing RATIONAL GOVERNMENT EXPENDITURE Cost-benefit Opportunity costs The irrelevance of sunk costs The market in a final retrospect THE MILITARY SUBSECTOR

#### 18 THE ECONOMICS OF ENERGY • 270

The gas shortage of 1979 U.S. oil supplies Running out of the domestic oil Import dependency THE WORLDWIDE OIL SQUEEZE World supply Oil price soars OPEC outlook Future oil shock THE AMERICAN PROBLEM The energy spectrum Energy independence PAYING THE BILL Winners Losers Inflation ENERGY POLICY Government investment in R&D Using the market Politics and economics The end of growth? A spaceship economy

#### 19 FROM MARKET TO PLANNING • 288

STAGES OF ECONOMIC DEVELOPMENT Inception of growth Present vs. past Is command successful? PLANNING AND ITS PROBLEMS Soviet planning Success indicators Profit as a "success indicator". The market as a planning tool Market socialism Market vs. plan Economies in mid-development Private aims, public goals High consumption economies. The rise of planning. Common problems.

## Part

# The Economic Background





# Chapter



#### A LOOK AHEAD

This is the chapter in which to get your bearings. As you read, keep in mind these objectives:

- (1) to get a feel for what is to come;
- (2) to learn how the book is organized; and
- (3) most important of all, to pick up a few study hints—you really want to pay attention to these.

This is a book about microeconomics, and right off the bat you must be wondering what "micro" means. It comes from the Greek word for small, but you will quickly learn that there is nothing small about the problems we will be tackling in these pages. Rather, microeconomics is a word that describes a certain *approach* to economic problems, an approach that begins from the vantage point of an individual actor in the economy—a consumer such as yourself, or a working person or a businessman—rather than from a perspective that looks out upon the whole system, as if we were flying over it in a spaceship.

That second, spaceship, approach to economic problems is called macroeconomics. "Macro" is the Greek word for large, and therefore it might seem as if the view from the spaceship were larger or more important than the view we get as individual actors. But it isn't larger, it is simply different; some problems are much easier to examine from one perspective and some from another. If we are interested in probing the nature of inflation or unemployment or economic growth, macro is the approach we normally use. But if we want to know more about riches and poverty, or the dynamics of big business or labor, or the causes of and cures for environmental problems, micro is the place from which to start.

This means, in effect, that learning about economics takes two exposures, micro and macro. Either one by itself will teach you a lot, but not quite enough. If this is your first book in economics, therefore, you will only be half an economist when you're finished. If you haven't already studied macro, you should complete your introduction to economics by looking into a text on that subject.

#### WHAT'S IN THIS BOOK

Microeconomics is our main concern in the pages to come, but we are not going to jump directly into its currents. Instead we begin with a chapter that locates microeconomics in the sweep of history. A long and turbulent past lies behind the economic system that we take for granted in microeconomics, and we ought to be familiar with the main lines of its evolution. Thus, in Chapter 2, we will encounter "The Evolution of the Market System," the purpose of which is to get you to take our economy a little *less* for granted.

After that, "A Bird's Eye View of the Economy" brings us to the world in which we live. Its purpose is to familiarize you with the shape and main features of the economic continent, so that you will have some appreciation of its dimensions and some knowledge of its basic geography when you begin exploring it on foot.

Part 2 changes focus abruptly. With some history and institutional background behind us, we turn to economic thinking itself. The three chapters in this part are about economics as a means of social inquiry. Of the three chapters, one is absolutely indispensable. This is Chapter 5, "Supply and Demand," in which you will encounter the single most useful tool of economic analysis, whether for macro or micro problems. Obviously this is a chapter to work through very care-

CHAPTER 1 WHAT THIS BOOK IS ALL ABOUT

#### MICRO ITSELF

Part 3 is really microeconomics proper. Because it is a lengthy part, we have broken it down into three subsections. The first of these, Chapters 7 through 10, is about how market economics work—and how they sometimes fail to work—in the essential task of allocating output. This is the core of the market system, the real heart of the subject of microeconomics.

The second section, Chapters 11 through 14, teaches us about another aspect of the market system. This is how business enterprise is integrated into the workings of a market economy. We learn about the meaning of business success and business failure from an economist's point of view, which is not always the same as a businessman's point of view. Here, for instance, is where the touchy subject of Big Business comes up for microeconomic scrutiny.

Finally, we devote the third section of microeconomics to an aspect of a market economy that has great political and social importance. This is income distribution—who gets how much, and why. In Chapter 16, we also ask whether, and to what extent, we can change the distribution of income if we wish to do so.

Our trip through the micro system readies us for Part 4, in which we confirm that microeconomics is certainly not about small-sized problems. In Chapter 17 we look into the controversial question of taxing and spending—perhaps the most pressing economic issue in American politics today. Chapter 18 takes us to an equally big and difficult problem—resources and energy. And our final chapter returns us to the historical perspective from which we began. What is happening to the microeconomic system that has occupied us in our text? Is the drift of history favorable for, or running against, market-based economies? That very large, although not very certain, problem brings our tour of microeconomics to a halt right at the border of the future.

#### STUDYING ECONOMICS

One last matter. Many students begin economics with mixed feelings. On the one hand they know that the subject is terribly important. On the other hand, they fear it will prove to be terribly difficult. For some reason, there is a mystique about economics that often gets in the way of mastering it easily.

One purpose of our text is to demystify economics. In point of fact, economics is no more difficult than English or psychology or history. As in all subjects, there is some jargon, and as in all subjects there are times when you may run up against things you don't instantly understand. In that case, again as with everything else, you have to work at it until you succeed. The point is that there is nothing intrinsically formidable about economics. Indeed, we think it is fascinating and absorbing, and we have tried hard in this book to convey that feeling to you.

#### **VOCABULARY**

A few suggestions may help you get set. We have already mentioned the problem of jargon. To become economists you will have to learn a dozen or so words and phrases, some of which have meanings that differ somewhat from everyday usage. Words like "monopoly" or "shortage" or even "competition" mean special things in economics and you should take pains to get those meanings as precisely as possible. And a few phrases like "marginal utility" or "opportunity cost" will be new to you and of course have to be memorized. Fortunately, the economic vocabulary is short and its unfamiliar phrases will rapidly lose their unaccustomed sound when you use them a few times.

#### **DIAGRAMS**

Associated with learning the vocabulary of economics is learning how to draw a few diagrams. Diagrams are an immensely powerful way of presenting many economic ideas. Far from complicating things, they simplify them enormously. A supply and demand diagram makes things immediately clear in a way that a dozen pages could not.

So you must learn to draw a few diagrams. There is a great temptation to do so hastily, without thinking about the problem that the diagram is trying to make clear. A little care in labeling your axes (how else can anyone know what the diagram is about?) or in making lines tangent where they are supposed to touch, or cross where they are supposed to intersect, will not only make the difference between a poor grade and a better one, but will demonstrate that you truly understand the matter being illustrated.

You will also note that throughout the book, under each figure and most tables, there is a sentence or a paragraph which highlights the point being made. This should help you in reviewing the material.

#### **KEY IDEAS**

Studying a vast subject requires organization. This means putting first things first and keeping details and secondary material in the background.

We've tried to simplify the task of learning by putting a highly abbreviated and goal-oriented "A Look Ahead" and "Looking Back" at the beginning and at the end of each chapter. These sections do not necessarily embrace all the vocabulary or ideas in each chapter; instead they try to give you objectives to bear in mind before starting, and summaries to collect your thoughts when you're done.

At the end of each chapter, first read over the general review. Then look only at "Key Concepts" to see if you can yourself reproduce that review. Lastly, a glance at "Economic Vocabulary" will serve as a final vocabulary test. Page numbers follow each word for easy reference.

#### **QUESTIONS AND EXTRA WORDS**

Next, take time to answer all the questions at the ends of chapters. We have tried to make them few and central. If your instructor assigns the Student Guide

7 CHAPTER 1 WHAT THIS BOOK IS ALL ABOUT

that accompanies this text, do those problems too. There is no substitute for working out an example or for jotting down three reasons for this, four reasons for that. Learning is a process about which we know very little, but we do know that the physical and intellectual act of writing (or mumbling to yourself) is much more effective than merely thinking. Practice, as they say, makes perfect. You might reflect on the story of the sailor on a sinking ship. When asked if he knew how to swim, he answered, "Well, I understand the theory of it..."

Economics has to be learned by arguing about it. Therefore after many chapters you will find a few additional pages—sometimes to add to your historical, statistical, or analytic knowledge, more often to open for your consideration problems of public policy that are related to the issues we have studied. The policy issues are often controversial. We hope you will worry about them—not just read them. They are there to open debate, not close it.

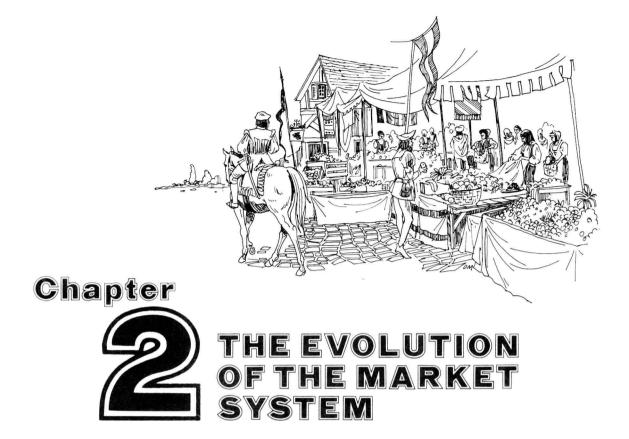
#### **ANALYSIS AND ABSTRACTION**

The idea of arguing brings us to our last word of counsel. Economics, as we have been at pains to say, is really not a hard language to learn. The key words and concepts are not too many or too demanding; the diagrams are no more difficult than those of elementary geometry. It is economic *thinking* that is hard, in a way that may have something to do with the aura of mystery we are out to dispel.

The hardness is not the sheer mental ability that is required. The reason lies, rather, in a special attribute of economic thought: its abstract, analytic character. Abstractness does not mean an indifference to the problems of the real world. Economics is about things as real as being without work. Nevertheless, as economists we do not study unemployment to learn firsthand about the miseries and sufferings that joblessness inflicts. We study unemployment to understand and analyze the causes of this malfunction of the economic system. Similarly, we do not study monopoly to fulminate against the profiteering of greedy capitalists, or labor unions to deplore the abuse of power by labor leaders, or government spending to declaim against politicians. We study these matters to shed light on their mechanisms, their reasons for being, their consequences.

There is nothing unusual in this abstract, analytic approach. All disciplines necessarily abstract from the immediate realities of their subject matters so that they may make broader generalizations or develop theories. What makes abstraction so difficult in economics is that the problems of the discipline are things that bother and affect us deeply in our lives. It is difficult, even unnatural, to suppress our feelings of approval or anger when we study the operations of the economic system and the main actors in it. The necessary act of analysis thus becomes mixed up with feelings of economic concern or even partisanship. Yet, unless we make an effort to think analytically and abstractly in a detached way, we can be no more than slaves to our unexamined emotions. Someone who knows that corporations or labor unions or governments are "good" or "bad" does not have to study economics, for the subject has nothing to teach such a person.

You must, therefore, make an effort to put aside your natural partisanship and prejudice while you study the problems of economics from its abstract, analytic, detached perspective. After you are done, your feelings will assuredly come back to you. No one has ever lost a sense of social outrage or social justice by taking a course in economics. But many students have changed or modified their preconceived judgments in one way or another. There is no escape, after all, from living in the world as economic citizens. But there is the option of living in it as intelligent and effective economic citizens. That is the prize we hope you carry away from this course.



#### A LOOK AHEAD

There is one central idea that this chapter will present—a very simple but exceedingly important idea. It is that capitalism—our Western economic society—represents a dramatic change in the way that mankind has grappled with its economic problems. In this chapter we will trace three main aspects of this change:

- (1) the emergence of a market society;
- (2) the development of a powerful industrial technology; and
- (3) the assertion of political limits on the economic machinery.

The purpose of this chapter is not only to review these critical elements of economic history, but to make you think about the subject of economics itself in a historical, evolutionary way.

#### WHERE DID CAPITALISM COME FROM?

The economic system that we are going to study in this book is called capitalism, or sometimes the *free enterprise system*. In a way, we all know what capitalism is, because it surrounds us. It is the world we live in. But the question we are going to start with is far removed from our daily experience: Where did capitalism come from? How did the free enterprise system come to be?

People sometimes talk about capitalism as if it were as old as the hills, as ancient as the Bible. Yet, on reflection, this is clearly not the case. Nobody ever called the Egyptian pharaohs "capitalists." The Greeks about whom Homer wrote were not a business society, even though there were merchants and traders in Greece; neither was imperial Rome a capitalist system. Medieval Europe was certainly not capitalist. Nor would anyone use the word *capitalist* to describe the brilliant civilizations of India or China, about which Marco Polo wrote, or the great empires of ancient Africa or the Islamic economies of which we catch glimpses in *The Arabian Nights*.

We will make explicit why these were not capitalist economies in a moment. But we must begin by realizing that capitalism is a modern economic system—and furthermore, a geographically limited one. Most of the people in the world's history have never had any contact with it whatsoever; even today, only a quarter or so of the world's population lives in a system that we would call capitalist.

#### STEREOTYPES OF CAPITALISM

Why is capitalism so exceptional? Let us answer the question in a curious way, by first asking people what they think capitalism is. If you asked a random sampling of Americans why they call our economy capitalist, you would be likely to hear answers such as these:

"It recognizes the right of private property."

"It's run by a market system, not by the government."

"It believes in economic freedom."

You might also hear some less flattering characterizations:

"It puts moneymaking over everything else."

"It's capitalist because the rich own most of the wealth."

"It's unstable, constantly producing problems."

There is some truth in all these stereotypes, flattering or otherwise. But we are not yet going to talk about capitalism as such. Instead, let us use these characterizations, which we have all heard many times, to reconstruct what must have come *before* capitalism. That may clear up the mystery of why capitalism is the exception in the world's economic history, not the rule.

#### BEFORE CAPITALISM

If society before capitalism was very different from society today, it follows that it must have looked something like this:

- No general recognition of private property rights.
- 2. No market network.

- 3. No importance given to the idea of economic freedom.
- 4. Moneymaking generally held in low esteem.
- 5. Most wealth not owned by "the rich."
- 6. Economic life generally stable, not beset by problems.

Was there ever such a society? There were, indeed many such societies: Egyptian, Greek, Roman, African, and feudal societies throughout Europe.

- 1. Private property. All of these societies recognized the right of some individuals to own wealth, often vast wealth. But none of them legally accorded the right of ownership to all persons. Great lords, priestly orders, patricians, or kings owned the fields; land was not owned by the peasants who worked it. Slavery was common, and slaves were property; they themselves did not own property (with a very few exceptions). The idea that a person's property was inviolate—protected by law—was far from generally recognized: Recall how the Tudor monarchs, relatively enlightened as monarchies went, could strip a man or a religious order of possessions as easily as they could award a fortune.
- 2. Markets. Certainly there were markets in all these societies, often colorful and important, where spices, gold, slaves, cloth, pottery, and foodstuffs were offered for sale. But when we look over the vast expanses of ancient Asia, Africa, or the Egyptian or Roman empires, we can see nothing like a great web of transactions, guiding the efforts of the country as a whole. Most production, and most distribution, took place by following the dictates of tradition or under the orders of a local lord. Only the small leftovers found their way to the market stalls. Even more important, there was no market at all to buy and sell land or to hire labor or to borrow or lend capital. Markets were the ornaments of the economy; tradition or command was its iron structure.
- 3. Economic freedom. Under such conditions, of course, the idea of economic freedom was held in little regard. Why worry about the *idea* of economic freedom when the *fact* did not exist—when peasants were not free to move as they wished, when artisans were bound to trades, when the relation of field workers to their masters was that of serf to lord, not employee to employer? The difference is that an employee has the legal right to quit a job, to work or not to work, as he or she chooses, whereas a serf is legally bound to a lord's land and to the work a lord assigns him.
- 4. Wealth and values. In such a setting, moneymaking was not much esteemed. Ambitious persons from the better walks of life sought fame and fortune in military exploits, in government, in the service of the court, or in the hierarchies of religion. Next time you are in a museum, take a look at some medieval art and notice how men of money are almost invariably painted as twisted, mean, and grasping, whereas soldiers and nobles are portrayed as tall, handsome, and grand. Moneymaking was generally considered beneath a person of noble blood; indeed, in Christendom it was a pursuit that was uncomfortably close to sin. In fact, usury—lending at interest—was a sin, and a mortal sin, at that.