**INSTRUCTOR’S MANUAL**

*to accompany*

Ehrenberg and Smith

*Modern Labor Economics: Theory and Public Policy*

*Thirteenth Edition*

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**A NOTE TO THE INSTRUCTOR**

This Instructor’s Manual is intended to summarize the content of the thirteenth edition of *Modern Labor Economics: Theory and Public Policy* in a way that explains our pedagogical strategy. Summarized briefly, we believe that labor economics can be best learned if students are (1) able to see the “big picture” early on, so that new concepts can be placed in perspective; (2) moved carefully from concepts they already know to new ones; (3) motivated by seeing the policy implications or inherently interesting insights generated by the concepts being taught. To this last end, we discuss policy issues in every chapter and, in addition, employ boxed examples to demonstrate in historical, cross-cultural, or applied managerial settings the power of the concepts introduced.

The text is designed to be accessible to students with limited backgrounds in economics. We do employ graphic analyses and equations as learning aids in various chapters; however, we are careful to precede their use with verbal explanations of the analyses and to introduce these aids in a step-by-step fashion. To help students in the application of concepts to various issues, we have printed answers to the odd-numbered review questions for each chapter at the back of the book.

We have also endeavored to put together a text that, while accessible to all, is a comprehensive and up-to-date survey of modern labor economics. There are chapter appendices designed to be used with more advanced students in generating additional insights.

In the first part of this Instructor’s Manual, we present a brief overview and the general plan of *Modern Labor Economics.* We then present a chapter-by-chapter review of the concepts presented in the text. In the discussion of each chapter we list the major concepts or understandings covered, and in some cases suggest topics or sections that could be eliminated if time must be conserved. We also present our answers to the even-numbered review questions at the end of each chapter.

An important part of this Instructor’s Manual are the suggested essay questions related to each chapter. We present two suggested essay questions for each chapter.

This Instructor’s Manual is a compilation of the work of three previous authors, Robert S. Smith (Cornell University), Robert M. Whaples (Wake Forest University), and Lawrence Wohl (Gustavus Adolphus University), and the current author, Leonie Stone.

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# OVERVIEW OF THE TEXT

INTRODUCTION/REVIEW: Chapters 1 and 2

Chapter 1: Introduction

Appendix 1A: Statistical Testing of Labor Market Hypotheses Chapter 2: Overview of the Labor Market

Chapters 1 and 2 introduce basic concepts of labor economics. They are written to be accessible to students without backgrounds in intermediate theory, and can, therefore, be used as building blocks when a professor must “begin at the beginning.” If the course is being taught to economics majors with intermediate microeconomics as a prerequisite, these chapters may be skipped or skimmed quickly as a review.

An appendix to Chapter 1 introduces the student to econometrics. The purpose of this appendix is to present enough of the basic econometric concepts and issues to permit students to read papers employing ordinary least squares regression techniques. We strongly recommend assigning Appendix 1A in courses requiring students to read empirical papers in the field. We also recommend (in footnote 3 of the appendix) an introductory econometrics text that could be assigned by instructors who wish to go beyond our introductory treatment.

THE DEMAND FOR LABOR: Chapters 3–5

Chapter 3: The Demand for Labor

Appendix 3A: Graphical Derivation of a Firm’s Labor Demand Curve Chapter 4: Labor Demand Elasticities

Chapter 5: Frictions in the Labor Market

The demand for labor is discussed first primarily because we believe that the supply of labor is a more complex topic in many ways. Before analyzing the labor/leisure choice and household production, we first introduce students to the employer side of the market. For instructors who desire to cover topics concerned with the decision to work first, however, we note that Chapters 6 and 7, which deals with that decision, are self-contained. Therefore, nothing would be lost if Chapters 6 and 7 were taught ahead of Chapters 3, 4, and 5.

In Chapter 3 the principal question analyzed is why demand curves slope downward. In Chapter 4 we move to a discussion of the elasticity of demand, and analyze the determinants of the precise relationship between wages and employment. The concepts are used to analyze how technological change and foreign trade affect labor demand. Finally, Chapter 5 discusses frictions in the labor market, both from the employee side of the market (monopsony) and from the employer side (quasi-fixed costs, training investments, hiring investments).

SUPPLY OF LABOR TO THE ECONOMY: Chapters 6 and 7

Chapter 6: Supply of Labor to the Economy: The Decision to Work

Chapter 7: Labor Supply: Household Production, the Family, and the Life Cycle

Chapters 6 and 7 analyze the decision of an individual to work for pay. The traditional analysis of the labor/leisure choice is given in Chapter 6, while in Chapter 7 the decision to work for pay is placed in the context of household production. The essential features of the decision to work for pay are included in Chapter 6. In one-quarter courses or courses in which time is scarce, Chapter 7 could be skipped; however, doing so would eliminate analyses of family labor supply decisions as well as labor supply decisions in the context of the life cycle.

FACTORS AFFECTING THE CHOICE OF EMPLOYMENT: Chapters 8–10

Chapter 8: Compensating Wage Differentials and Labor Markets Appendix 8A: Compensating Wage Differentials and Layoffs

Chapter 9: Investments in Human Capital: Education and Training Appendix 9A: A “Cobweb” Model of Labor Market Adjustment

Chapter 10: Worker Mobility: Migration, Immigration, and Turnover

Once they have decided to seek employment, prospective workers encounter important choices concerning their occupation and industry, as well as the general location of their employment.

Chapters 8 through 10 analyze these choices, with Chapters 8 and 9 focusing on industry/occupational choice and Chapter 10 on the choice of a specific employer and the location of employment. More particularly, Chapter 8 presents an analysis of job choice within the context of jobs that differ along nonpecuniary dimensions. Chapters 9 and 10 analyze issues affecting worker investments in skill acquisition (Chapter 9) and job change (Chapter 10), and both employ the concepts of *human capital* theory. Chapters 8 and 9 contain appendices of interest to instructors who wish to teach more advanced material.

ANALYSES OF SPECIAL TOPICS IN LABOR ECONOMICS: Chapters 11–16

Chapter 11: Pay and Productivity: Wage Determination Within the Firm

Chapter 12: Gender, Race, and Ethnicity in the Labor Market

Appendix 12A: Estimating Comparable-Worth Earnings Gaps: An Application of Regression Analysis

Chapter 13: Unions and the Labor Market

Appendix 13A: Arbitration and the Bargaining Contract Zone

Chapter 14: Unemployment

Chapter 15: Inequality in Earnings

Appendix 15A: Lorenz Curves and Gini Coefficients

Chapter 16: The Labor-Market Effects of International Trade and Production Sharing

Having presented basic concepts and analytical tools necessary to understand the demand and supply sides of the labor market, we now move to analyses of special topics: compensation, discrimination, unions, unemployment, inequality, and international issues. A complete analysis of all these topics requires an understanding of behavior on both the demand and supply sides of the market, and these chapters are built upon the preceding ten. No new analytical tools are introduced in these chapters.

# CHAPTER 1: INTRODUCTION

Because the textbook stresses economic analysis as it applies to the labor market, students must understand the ways economic analyses are used. The basic purpose of Chapter 1 is to introduce students to the two major modes of economic analysis: positive and normative.

Because both modes of analysis rest on some very fundamental assumptions, Chapter 1 discusses the bases of each mode in some detail.

In our treatment of positive economics, the concept of rationality is defined and discussed, as is the underlying concept of scarcity. There is, in addition, a lengthy discussion of what an economic model is, and an example of the behavioral predictions flowing from such a model is presented. The discussion of normative economics emphasizes its philosophical underpinnings and includes a discussion of the conditions under which a market would fail to produce results consistent with the normative criteria. Labor market examples of governmental remedies are provided.

The appendix to Chapter 1 introduces the student to ordinary least squares regression analysis. It begins with univariate analysis, introduced in a graphical context, explaining the concepts of dependent and independent variables, the “intercept” and “slope” parameters, the “error term,” and the *t* statistic. The analysis then moves to multivariate analysis and the problem of omitted variables.

**List of Major Concepts**

1. The essential features of a market include the facilitation of contact between buyers and sellers, the exchange of information, and the execution of contracts.
2. The uniqueness of labor services affects the characteristics of the labor market.
3. Positive economics is the study of economic behavior, and underlying this theory of behavior are the basic assumptions of scarcity and rationality.
4. Normative economics is the study of what “should be,” and theories of social optimality are based in part on the underlying philosophical principle of “mutual benefit.”
5. A market “fails” when it does not permit all mutually beneficial trades to take place, and there are three common reasons for such failure.
6. A governmental policy is “Pareto-improving” if it encourages additional mutually beneficial transactions. At times, though, the goal of improving Pareto efficiency conflicts with one of generating more equity.
7. The concept that governmental intervention in a market may be justified on grounds other than the principle of mutual benefit is discussed (for example, government intervention may be justified on the grounds that income redistribution is a desirable social objective).
8. (Appendix) The relationship between two economic variables (e.g., wages and quit rates) can be plotted graphically; this visual relationship can also be summarized algebraically.
9. (Appendix) A way to summarize a linear relationship between two variables is through ordinary least squares regression analysis—a procedure that plots the “best” line (the one that minimizes the sum of squared deviations) through the various data points. The parameters describing this line are *estimated,* and the uncertainty surrounding these estimates are summarized by the *standard error* of the estimate.
10. (Appendix) Multivariate procedures for summarizing the relationship between a dependent and two or more independent variables is a generalization of the univariate procedure, and each coefficient can be interpreted as the effect on the dependent variable of a one-unit change in the relevant independent variable, *holding the other variables constant.*
11. (Appendix) If an independent variable that should be in an estimating equation is left out, estimates of the other coefficients may be biased away from their true values.

**Answers to Even-Numbered Review Questions**

1. Are the following statements “positive” or “normative”? Why?
   1. Employers should not be required to offer pensions to their employees.
   2. Employers offering pension benefits will pay lower wages than they would if they did not offer a pension program.
   3. If further immigration of unskilled foreigners is prevented, the wages of unskilled immigrants already here will rise.
   4. The military draft compelspeople to engage in a transaction they would not voluntarily enter into; it should therefore be avoided as a way of recruiting military personnel.
   5. If the military draft were reinstituted, military salaries would probably fall. Answer: (a) normative (b) positive (c) positive (d) normative (e) positive

4. What are the functions and limitations of an economic model?

Answer: The major function of an economic model is to strip away real-world complexities and focus on a particular cause/effect relationship. In this sense an economic model is analogous to an architect’s model of a building. An architect may be interested in designing a building that fits in harmoniously with its surroundings and, in designing such a building, the architect may employ a model that captures the essentials of his or her concerns (namely, appearance) without

getting into the complexities of plumbing, electrical circuits, and the design of interior office space. Similarly, an economic model will often focus on a particular kind of behavior and ignore complexities that are either not germane to that behavior or only of indirect importance.

Models used to generate insights about responses to a given economic stimulus are often not intended to forecast actual outcomes. For example, if we are interested in how behavior is affected by stimulus B, with factors C, D, and E held constant, our model may not correctly forecast the observed behavior if stimuli C through E also change.

6. A law in one town of a Canadian province limits large supermarkets to just four employees on Sundays. Analyze this law using the concepts of normative economics.

Answer: Laws restricting employment essentially block mutually beneficial transactions. There are employees who want to work on Sundays, and there were employers who wanted to employ them on Sundays. The restrictions upon their employment prevented these transactions from occurring and therefore made both workers and their potential employers worse off. Thus from a positive point of view, this is not optimal. However, some may feel that fewer people should work on Sunday, and thus, from a normative point of view, some may find it acceptable.

8. In discussing ways to reduce lung diseases caused by workplace hazards, one commentator said:

Gas masks are very uncomfortable to wear, but economists would argue that they are the socially preferred method for reducing the inhalation of toxic substances whenever they can be produced for less than it takes to alter a ventilation system.

Comment on this quotation from the perspective of normative economics.

Answer: This commentator considers only the costs of production, and not any additional benefits from the ease of working without gas masks, so in fact it may be that this is not optimal from either a positive or normative view. From a normative point of view, some may feel that workers should not be compelled to wear uncomfortable gas masks, and thus it may be desirable to require ventilation systems rather than allowing the option of masks.

**Answers to Even-Numbered Problems**

1. (Appendix) Suppose that a least squares regression yields the following estimate:

*Wi* = –1 + 0.3*Ai*, where *W* is the hourly wage rate (in dollars) and *A* is the age in years.

A second regression from another group of workers yields this estimate:

*Wi* = 3 + 0.3*Ai*– 0.01(*Ai*)2.

* 1. How much is a 20-year-old predicted to earn based on the first estimate?
  2. How much is a 20-year-old predicted to earn based on the second estimate?

Answer: a. *W* = –1 + 0.3 x 20 = 5 dollars per hour.

b. *W* = 3 + 0.3 x 20 – 0.01 x 20 x 20 = 3 + 6 – 4 = 5 dollars per hour.

4. (Appendix) Suppose you have information on which of the 13 randomly selected teenage workers in the fast-food industry worked part-time and which worked full-time. Variable *Fi* is equal to 1 if the worker is employed full-time, and it is equal to zero otherwise. With this information, you estimate the following relationship between wages, age, and full-time employment:

*Wi* = –0.5 + 0.25*Ai* + 0.75*Fi*

(.10) (.20)

(the standard errors are in parentheses).

a. How much is a 20-year-old who works full-time predicted to earn based on this estimate?

b. How much is a 20-year-old who works part-time predicted to earn based on this estimate?

Answer: a. *W* = –0.5 + 0.25*(20)* + 0.75*(1) =* $5.25

b. *W* = –0.5 + 0.25*(20)* + 0.75*(0) =* $4.50

6. (Appendix) Compare the first regression estimate in Problem 2 with the regression estimate in Problem 4.

a. Is there an omitted variable bias when the full-time variable is not included? Explain.

b. What can be said about the correlation between age and full-time employment? Explain.

Answer: a. Omitting the full-time/part-time dummy variable creates omitted variable bias. The estimate for the full-time worker is too low, and the estimate for the part-time worker is too high.

b. The assumption of the regression model is that the independent variables are uncorrelated. However, it is possible that older workers are more likely to work full-time, which would create a multicollinearity problem.

**Suggested Essay Questions**

1. Child labor is an issue that has been discussed a lot recently. From the perspective of normative economics, explain the problem with child labor.

Answer: Pareto efficiency requires that transactions have mutual benefits, and this can be assured only if the transactions are voluntary and take place with complete information. Children may be compelled by their parents to work, and they have limited capacities to make informed decisions even in the absence of compulsion.

1. Recent television news shows have equated low wages and poor working conditions of many immigrant workers in the United States with “slave labor.” Using the concepts of normative economics, comment on the idea that the “market” outcomes of low wages and poor working conditions constitute slave labor.

Answer: The job of the labor market is to promote mutually beneficial transactions, and to work well the market must be characterized by the absence of barriers to the accomplishment of these transactions. Enslavement implies the lack of ability to transact freely, so slavery is inconsistent with the goal of accomplishing mutually beneficial transactions. While low wages and poor working conditions do characterize slavery, they may be accepted *voluntarily* by workers whose alternatives (for example, those in their country of origin) are even worse. Thus, low wages and poor working conditions do not necessarily imply the existence of slavery.

1. Consider the following statement: “The government should not let the income of those who lose their jobs fall below what they were previously earning.” Does this statement fall into the category of normative economics? Explain.

Answer: Economic theory, used normatively, is concerned with mutually beneficial transactions and the condition of Pareto efficiency. While the above statement is normative, in that it indicates what the government should do, it is “redistributive” in nature and does not address the concept of mutually beneficial transactions. To be categorized as within the scope of “normative economics,” a statement must in some way address the standards economists apply toward the achievement of Pareto efficiency: Can all parties gain by a transaction? Can some gain without anyone else losing? If some gain and some lose, can the gainers compensate the losers?

# CHAPTER 2: OVERVIEW OF THE LABOR MARKET

Our goal in this text is to move students along very carefully from what they do know to the mastery of new concepts. It is our belief that students learn most efficiently if they can associate these new ideas with an *overall framework,* and it is the purpose of Chapter 2 to provide that framework. This chapter has both a descriptive and an analytical purpose. One aim is to introduce students to the essential concepts, definitions, magnitudes, and trends of widely used labor market descriptors. To this purpose, the chapter discusses and presents data on such topics as the labor force, unemployment, the distribution of employment, and the level of (and trends in) labor earnings. The second aim is to provide students with an overview of labor market analysis. To this end, we discuss basic concepts of demand and supply so that students will be able to see their interaction at the very outset.

We start the overview with a discussion of demand schedules and their corresponding demand curves. Particular attention is given to the distinction between movement along a curve and shifts of a curve. Distinctions between individual and more aggregated demand curves are discussed, as is the distinction between short-run and long-run demand curves. A similar discussion and set of distinctions are made for the supply side of the market.

After both the demand and supply sides of the market have been discussed and generally modeled, we turn to the question of wage determination and wage equilibrium. Forces that can alter market equilibria are comprehensively discussed, and the chapter’s major concepts are reinforced by discussions of the effects of unions, the existence of disequilibrium, and the concept of being “overpaid” or “underpaid” (including a discussion of economic rents). The chapter ends with a discussion of unemployment across various countries.

**List of Major Concepts**

1. The labor market and its various subclassifications (national, regional, local; external, internal; primary, secondary) are defined.
2. The “labor force” consists of those who are employed or who are seeking work, and major trends in labor force participation rates are discussed.
3. The “unemployed” are those who are not employed but are seeking work (or awaiting recall); trends in the unemployment rate are noted.
4. Changes in the industrial and occupational distribution of employment are facilitated by the labor market, which also facilitates adjustments to the “birth” and “death” of job opportunities.
5. The distinction between nominal and real wage rates is made, and the calculation of real wages is illustrated.
6. Distinctions among wage rates, earnings, total compensation, and income are depicted graphically.
7. The labor market is one of three major markets with which an employer must deal; in turn, labor market outcomes (terms of employment and employment levels) are affected by both product and capital markets.
8. The concepts underlying a labor demand schedule are associated with product demand, the choice of technology, and the supply schedule of competing factors of production; scale and substitution effects are ultimately related to these forces.
9. Underlying a supply schedule for labor are the alternatives workers have and their preferences regarding the job’s characteristics.
10. Distinctions between *individual* and *market* demand and supply curves are discussed.
11. Movements along, rather than shifts of, demand and supply curves occur when wages of the job in question change; when a variable not shown on the graph changes, the curves tend to shift.
12. The interaction of market demand and supply determines the equilibrium wage.
13. Changes in the equilibrium wage rate are caused by shifts in either the demand or supply curves. Disequilibrium will persist if the wage is not allowed to adjust to shifts in demand or supply.
14. The concepts of “overpaid” and “underpaid” compare the actual wage to the equilibrium (market) wage rate.
15. Individuals paid more than their reservation wage are said to obtain an “economic rent.”
16. The concepts of shortage and surplus are directly related to the relationship between actual and equilibrium wage rates.
17. Unemployment rates, and especially long-term unemployment rates, have risen in Europe relative to the United States and Canada over the recent decade; this rise may reflect the existence of relatively stronger nonmarket forces in Europe.

**Answers to Even-Numbered Review Questions**

2. Analyze the impact of the following changes on wages and employment in a given occupation:

1. A fall in the danger of the occupation.
2. An increase in product demand.
3. Increased wages in alternative occupations.

Answer: (a) A fall in the danger of the occupation, other things being equal, should increase the attractiveness of that occupation, shifting the supply curve to the right and causing employment to rise and wages to fall.

1. An increase in product demand will shift the demand for labor curve to the right causing both wages and employment to increase.
2. Increased wages in other occupations will render them relatively more attractive than they were before and cause the supply curve to the occupation in question to shift to the left. This will cause employment in this market to fall and wages to rise.

4. Suppose a particular labor market was in market-clearing equilibrium. What could happen to cause the equilibrium wage to fall? Suppose price levels were rising each year, but money wages were “sticky downward” and never fell; how would this market adjust?

Answer: Starting from the position of equilibrium, a labor market could experience a fall in the equilibrium wage if either the demand curve shifts to the left or the supply curve shifts to the right. If wages are sticky downward, the wage cannot fall when demand falls. Thus, at the old wage, there will be a surplus of labor (unemployment).

1. Ecuador is the world’s leading exporter of bananas, which are grown and harvested by a large labor force that includes many children. Assume Ecuador now outlaws the use of child labor on banana plantations. Using economic theory in its positive mode, analyze what would happen to employment and wages in the banana farming industry in Ecuador. Use demand and supply curves in your analysis.

Answer. Outlawing child labor on banana plantations reduces the supply of labor to these plantations, shifting the supply curve to the left. With a fixed demand curve, this shift in the supply curve drives up wages and drives down employment.

8. Assume that the war in Iraq increased the desired size of the U.S. military, and assume that potential recruits were reduced by the prospect of facing dangerous, unpleasant wartime conditions. First, analyze how the war affected the supply curve and the demand curve for military personnel. Second, use your analysis to predict how the war affected the wages and the employment level of military personnel.

Answer: The demand for military personnel increases while the supply of military personnel decreases. This will increase the wages of military personnel, but the effect on employment depends on the relative size of the shifts.

10. Suppose we observe that employment levels in a certain region suddenly decline as a result of (i) a fall in the region’s demand for labor, and (ii) wages that are fixed in the short-run. If the *new* labor demand curve remains unchanged for a long period and the region’s labor supply curve does not shift, is it likely that employment in the region will recover? Explain.

Answer: The initial response to a leftward shift in the labor demand curve in the context of fixed wages is for there to be a relatively large decline in employment. This decline in employment is larger than the ultimate decline in employment. The initial disequilibrium between demand and supply in the labor market should force wages down in the long-run, and as wages decline firms will move downward along their labor demand curves and will begin to employ more labor.

However, employment in the region would recover to its prior level (assuming no subsequent shifts in demand or supply curves) only if the supply curve was vertical; if supply curves are upward-sloping, the declining wage will cause some withdrawal of labor from the market and employment will not recover to its prior level.

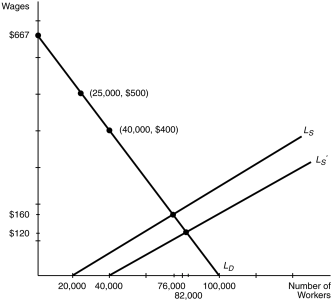
**Answers to Even-Numbered Problems**

1. Suppose that the supply curve for school teachers is *LS* = 20,000 + 350*W* and the demand curve for school teachers is *LD* = 100,000 – 150*W*, where *L* = the number of teachers and *W*

= the daily wage.

* 1. Plot the demand and supply curves.
  2. What are the equilibrium wage and employment level in this market?
  3. Now suppose that at any given wage 20,000 more workers are willing to work as school teachers. Plot the new supply curve and find the new wage and employment level. Why doesn’t employment grow by 20,000?

Answer: a. See the figure. Plot the *LD* and *LS* curves by solving for desired employment at given wage rates. If *W* = 500, for example, employers desire 25,000 workers (*LD* = 100,000 – 150 x 500); if *W* = 400, they would desire 40,000. Since the equation above is for a straight line, drawing a line using these two points gives us the demand curve. Use the same procedure for the labor supply curve.



1. To find the equilibrium, solve for the wage at which the quantity of labor supplied equals the quantity of labor demanded: *LS* = 20,000 + 350*W* = 100,000 – 150*W* = *LD*. Solve for *W* by adding 150*W* to both sides and subtracting 20,000 from both sides to yield 500*W* = 80,000. Dividing both sides by 500 reveals that *W* = $160 per day. Plugging *W* = $160 into both the labor demand and supply equations shows that *L* = 76,000 schoolteachers.
2. The new labor supply curve is *LS'* = 40,000 + 350*W*. Setting this equal to *LD* and solving shows that *W* = $120 per day; *L* = 82,000 school teachers. Employment doesn’t grow by 20,000 because the shift in the supply curve causes the wage to fall, which induces some teachers to drop out of the market.

4. Suppose the adult population of a city is 9,823,000 and there are 3,340,000 people who are not in the labor force and 6,094,000 who are employed.

a. Calculate the number of adults who are in the labor force and the number of adults who are unemployed.

b. Calculate the labor force participation rate and the unemployment rate.

Answer: a. Number in the labor force = 9,823,000 – 3,340,000 = 6,483,000 people.

Number unemployed = 6,483,000 – 6,094,000 = 389,000.

b. Participation = 6,483,000/9,823,000 = .659 or 66%.

Unemployment rate = 389,000/6,483,000 = .06 or 6%.

6. The following table gives the demand and supply for cashiers in retail stores.

|  |  |  |
| --- | --- | --- |
| **Wage Rate ($)** | **Number of Cashiers Demanded** | **Number of Cashiers Supplied** |
| 3.00 | 200 | 70 |
| 4.00 | 180 | 100 |
| 5.00 | 170 | 120 |
| 6.00 | 150 | 150 |
| 7.00 | 130 | 160 |
| 8.00 | 110 | 175 |
| 9.00 | 80 | 190 |

a. Plot the supply and demand curves.

b. What are the equilibrium wage and employment levels in this market?

c. Suppose the number of cashiers demanded increases by 30 at every wage rate. Plot the new demand curve. What are the equilibrium wage and employment level now?

Answer: a. Can be easily plotted from the table.

b. The equilibrium wage is $6.00, and the employment level is 150 cashiers.

c. Demand shifts rightward. The equilibrium wage is $7.00, and the employment level is 160 cashiers.

**Suggested Essay Questions**

1. American students have organized opposition to the sale by their campus stores of university apparel made for American retailers by workers in foreign countries who work in “sweatshop” conditions (long hours at low pay in bad working conditions). Assume this movement takes the form of boycotting items made under sweatshop conditions.
   1. Analyze the immediate labor market outcomes for sweatshop workers in these countries, using demand and supply curves to illustrate the mechanisms driving this outcome.
   2. Assuming that actions by American students are the only force driving the improvement of wages and working conditions in foreign countries, what must these actions include to ensure that the workers there are unambiguously better off?

Answer. (a) The demand curve for low-wage workers in foreign countries shifts to the left when the product demand for the apparel they made falls. This drives down wages and employment (assuming a fixed supply curve). (b) To avoid the effects in (a), students in the U.S. must be willing to buy the same quantity and quality of apparel at higher prices—that is, they must be willing to pay a premium for apparel made by better-paid workers.

1. Comment on the following quotation: “One way that a minimum wage could result in *expanded* employment is if the government sets the minimum *below* the market equilibrium wage.”

Answer: Absent conscription, firms cannot pay below the market wage, because at that wage, demand exceeds supply (supply becomes the constraint on employment). With wages below equilibrium, the competition for employees among employers will drive the wage up toward the market-clearing level. Thus, a below-market minimum wage will not be binding (that is, firms will voluntarily pay more than the minimum wage to their workers).

1. Part-time workers are generally paid less than full-time workers on an hourly basis. Think about why this is the case by considering a situation in which the demand curves for full-time and part-time workers are different, but supply to the two kinds of jobs comes from the *same pool of workers.* Could a wage gap between part-time and full-time jobs be sustained in this situation? Explain your answer.

Answer: Workers from the same pool will apply for the same jobs, and a wage gap between full- and part-time jobs would lead to more applications in the higher-wage sector and fewer in the lower-wage one. Thus, the responsiveness of applications to wage differences will eventually eliminate such differences. Note that it is the difference in *wages* that drives applications, *not* the difference in demand curves between the two sectors.

1. How will a fall in the civilian unemployment rate affect the supply of recruits for the volunteer army? What will be the effect on military wages?

Answer: Supply curves to a given occupation are drawn holding alternative opportunities constant. If those opportunities become more attractive, the supply curve to the given occupation will shift left and tend to drive up wages. Thus, a fall in the unemployment rate will shift the army’s supply curve to the left (there will be fewer recruits at each army wage rate), and the army’s wages will be driven up.