Pensions. Print out and turn in the list of Senators on the committee.

   This is the home page for the Senate Committee on Health, Education, Labor, and
   Pensions. Select “Schedule/Events.” Read through the list. Choose a event of interest, print
   it out and turn it in with a brief sentence or two of why this bill is of interest to you.

4. Go to <http://www.uschamber.org>
   This is the home page for the United States Chamber of Commerce. Scroll down and
   select “Press Releases” under Media Center. Select one of the recent press releases and find
   both a positive and normative statement in the same press release and identify them as such.
   Turn in a copy of the press release with the positive and normative statements clearly
   identified.

Answers to Review Questions

The factor markets for capital and land belong in the lower half of the circular flow diagram,
as illustrated in Figure 1.1. (For sake of space, the market for land is not drawn in). The
desire to earn an income motivates households to supply labor, land, and capital inputs,
represented by the arrows drawn from the household sector to the input markets. The desire
of firms to earn a profit gives rise to a demand for each factor of production, illustrated by
the arrows drawn from the business sector to the input markets. The interaction of demand
and supply in each market determines the equilibrium price and quantity of each factor.

Changes in demand or supply in one factor market affect not only the price and
quantity in that market but also the price and quantity in the other factor markets. As an
example, assume the demand for labor increases, represented by the shift in the demand
curve from $D_{L1}$ to $D_{L2}$. The wage rate will rise in the labor market from $W_1$ to $W_2$.
Because labor is more expensive, firms will be motivated to substitute capital for labor,
shifting the demand curve for capital to the right from $D_{K1}$, to $D_{K2}$, which causes the price
of capital (the interest rate) to increase from $i_1$, to $i_2$. The higher price of capital and
reduced demand for labor will then cause a second round of adjustments in the labor market.
If human beings could be bought and sold, the labor market would more closely resemble a commodity market. One effect of this would be to reduce the importance of nonpecuniary conditions as a determinant of the supply of labor. In a slave system, for example, the object of slave owners is to maximize their pecuniary return. Although the quality of working conditions is of great importance to the slaves, the owners care about working conditions only to the extent that it effects their profits. A second effect of allowing human beings to be bought and sold is that slave owners would be more likely to engage in frequent trading than would the slaves themselves, increasing the sensitivity of the price of labor to fluctuations in demand and supply. Finally, in a slave system market forces would be less effective as an automatic policemen on the social conditions of labor since labor mobility is heavily circumscribed.

The most important difference between the labor markets for day laborers and migrant farm workers and pilots and teachers concerns the length of the employment relationship. Day
laborers and migrant workers are hired on a day-to-day basis while pilots and teachers typically have long-term employment contracts of a year or more. Over a twelve month period the day laborers or migrant workers may work for dozens of different employers. Teachers and pilots, on the other hand, often work for the same employer many years. A second difference is that the services of day laborers and migrant workers are often bought and sold through a central clearinghouse (such as a temporary labor agency) while the jobs for pilots and teachers are dispersed among many separate employers. A third difference is that the low-skill, manual-labor type of work done by day laborers and migrant workers makes both the jobs and workers in the market more homogeneous.

These characteristics cause the labor market for migrant workers and day laborers to more closely resemble a commodity market than do the labor markets for teachers and pilots. The short-term nature of the employment relationship makes wages more sensitive to shifts in demand and supply. The dispersion in wages should also be smaller in the market for migrant workers and day laborers because buyers and sellers have better information and are more homogeneous.

4. Because of technological change, shifting consumer expenditure patterns, demographic trends, and so on, the demand and supply of labor in the economy are constantly changing. As these shifts in demand and supply take place, some markets experience an excess demand for labor, others experience an excess supply. For labor to be allocated to its most efficient use, it is necessary that workers flow from the markets having an excess supply of labor to those having an excess demand. A market system accomplishes this through changes in wage rates and the mobility of labor. Wages will rise in the markets having an excess demand and will fall in those having an excess supply. This change in wages acts as a signal to workers that more labor is needed in some markets and less labor in others. In response to the change in wages, it is necessary that workers be willing and able to move from one labor market to another, otherwise the allocative process will be short-circuited.

Labor market information is crucial to the process of labor mobility since workers will flow from one market to another only if they are aware of the higher wages and job openings that exist in the markets having excess demand. Similarly, people must have adequate information about which fields are expanding and contracting if they are to choose the types of training and occupations of which the economy is in most need.

5. An internal labor market is the group of jobs in the firm which are filled by internal promotion of employees. An external labor market is the area outside of the firm in which it and other firms compete for workers. The internal labor market is connected to the external labor market at the port of entry jobs in the firm. These jobs are at the bottom of the job ladder in the firm and are where new employees start.

In general, firms have some discretion over the wage paid to employees in the internal labor market. In a competitive market, if the firm pays workers less than the market determined wage, all the workers will quit. Likewise, if the firm pays more than the going wage it will ultimately go out of business. The existence of firm-specific training, seniority provisions, pension rights, barriers to entry in the product market, and other such factors reduces the competitive pressure on the firm to pay the market rate, allowing it some room for discretion in the wage that is paid. The forces of supply and demand are not irrelevant, however, for competitive pressures place an upper and lower boundary on wages which the firm can not go beyond if it is to retain a work force and earn a minimum level of profit.

6. Market forces of supply and demand could be responsible for the higher earnings of truck drivers. If a truck driver's job is more dangerous, requires more skill, or is physically more demanding than a bank teller's job, the wage for truck drivers must be higher to induce people to become truck drivers. Institutional forces could also account for the higher pay of truck drivers. Many truck drivers, for example, belong to a union, while most bank tellers do
not. Sociological forces may also have a role in explaining the higher pay of truck drivers. Most truck drivers are male, while most bank tellers are female. It is possible that firms discriminate against women by paying them lower wages relative to equally productive men.

7. One difference between the neoclassical and institutional school of labor economics concerns the theory of the labor market. The neoclassical theory of the labor market has two major parts. The first is the model of economic man, the second is the assumption of competitive markets. The model of economic man assumes that people maximize, exercise rational choice, and are individualists. The institutional theory has a different model of human behavior. It assumes people satisfice, have bounded rationality, and are highly influenced by what other people think and do. Institutional theory also assumes that labor markets are imperfectly competitive. The neoclassical school views market forces as the most important determinant of labor market outcomes, the institutional school gives more emphasis to institutional and sociological forces.

The two schools of thought also differ with respect to research methodology. The neoclassical school relies on deductive reasoning and the use of marginal decision rules. The institutional school uses inductive reasoning and a case study approach. It rejects the use of marginal decision rules.

8. First consider market forces. Market forces reflect underlying differences among men and women in productivity and cost in the labor market. These productivity and cost differentials give rise, in turn, to differences in demand and supply curves for the two types of labor. Thus, if men have greater physical strength than women and certain jobs (e.g., construction worker, coal miner) require greater strength, then men will have a productivity advantage in these lines of work, employers will be willing to pay a higher wage for male labor, and men will self-select into these occupations. A similar story could be told to explain why women tend to self-select into certain other occupations, such as school teacher and nurse, although in this case their advantage comes not from physical strength but (say) a greater sense of caring for people or love of being with children than possessed by men (on average). Market forces, as they reflect comparative advantage between men and women in productive activities, could also explain gender differences in hours of work. Women, for example, could have a comparative advantage in child care and other family activities and, thus, comparative advantage would suggest women devote fewer hours to market work and more hours to family work than men.

But these gender differences between men and women could be the product of institutional forces. One could argue that in most occupations men and women can equally well perform the job so there are no gender productivity differences or considerations of comparative advantage. Then why are men more likely to be construction workers and engineers and women more likely to be nurses and school teachers? Part of the explanation could be that various institutions act as "gatekeepers" to occupations and these institutions, either in the past or still today, systematically steer men and women to different jobs. Thus, up to the 1970s many professional schools in engineering, law and medicine admitted more men than equally qualified women, while many labor unions in areas such the construction trades largely barred women from competing for such jobs. The longer hours worked by men than women may also reflect institutional forces, such as the decision of many corporations to not provide daycare facilities, thus leading women more than men to look for part-time jobs so they can have more flexibility and time for children. Alternatively, in earlier decades government protective labor laws prohibited companies from employing women for more than a certain number of hours per day or from doing night work.

Sociological forces may also account for the observed gender differences. A
sociological force, for example, is a social norm. Men and women may be socialized to accept that men are the principle breadwinner and/or that women’s first responsibility is taking care of children. Alternatively, social norms may dictate that being an auto mechanic is not an appropriate “feminine” occupation, while being a nurse is not an appropriate “masculine” occupation. Another sociological force is custom and tradition. Going back to Biblical days it has been customary for men to be paid more than women (see Chapter 9). Once these pay differences are established they tend to become accepted as “natural” and thus exhibit considerable inertia and persistence.

What makes things particularly complicated is that all three forces, market, institutional and sociological, may have a role in generating these labor market outcomes, making disentangling their separate effect quite difficult.
Differences in Tastes
Difference in Reward Structures

APPENDIX 2B Constrained Optimization and the Labor/Leisure Choice Model
Equilibrium Hours of Work
The Slope of the Indifference Curve
The Income and Substitution Effects

APPENDIX 2C Estimating a Labor Supply Curve with Linear Regression
The Regression Line
The Standard Error of the Regression Coefficient
The Coefficient of Determination
Calculating Labor Supply Elasticities
An Example of a Labor Supply Function

Internet Assignments

1. Go to <http://www.bls.gov/data/home.htm>
   This is the statistics home page for the Bureau of Labor Statistics. Find an example of
   a cross-section data series and an example of a time-series data series. Print out the pages
   that correspond to these examples that you have found and add a couple sentences about
   why the data are either cross-section or time-series.

2. Go to <http://v.rww.lottery.state.mn.us/pressrel.html>
   This is the home page for press releases corresponding to the lottery for the state of
   Minnesota. Find an article that illustrates either the assumption that leisure is a normal good
   is reflected by individuals behavior, or that the assumption is not reflected in observed
   behavior. In a couple of sentences only, explain what behavior the article you chose
   illustrates.

Answers to Review Questions

a. The budget constraint without the overtime law is ABD. After the overtime requirement,
   the budget constraint becomes ABCE.

b. The original indifference curve is I₁. With the overtime requirement, hours of work
   increase from 40 to 45, shown by the tangency of the indifference curve I₂ and the line
   segment CE at point G.

c. The income effect measures the change in hours of work resulting from a change in
   income, holding the wage constant. The substitution effect measures the change in hours
   of work resulting from a change in the wage rate, holding income constant. Graphically,
   the income effect is given by the decrease in hours of work from 40 to 38 (point C to F),
   the substitution effect is given by the increase in hours of work from 38 to 45 (point F to
   G). The substitution effect is larger than the income effect.

d. Given a wage of $12.00 for all hours worked, the budget constraint would become the
   dashed line ABH. Starting from 40 hours (point C), equilibrium hours of work could
   either increase or decrease, depending on whether the income effect or substitution effect
   was larger. (In Figure 2.1 hours of work increase to point J.) It can be predicted,
   however, that hours of work would not increase to 45 as they did with the overtime law
   because the increase in the price of leisure is the same (from $8.00 to $12.00), but the
increase in income in this case is much larger, giving rise to a larger negative income effect and, thus, larger demand for leisure.

2. **Figure 2.2, (a)** illustrates the case of a lump-sum tax. The initial budget constraint is $ABC$. Equilibrium hours of work are at $H_1$ (point $X$) where the indifference curve $I_1$ is tangent to $ABC$. A lump-sum tax reduces the person's income by an equal amount regardless of hours of work. The effect is to cause a parallel leftward shift of the budget constraint to $ADE$. The new equilibrium hours of work is at $H_2$ (point $Y$). Hours of work have increased. The reason is that the reduction in income leads to an income effect that causes the person to demand less leisure. Since the tax did not change the price of leisure (the wage), there is no substitution effect.

**Figure 2.2, (b)** illustrates the case of a proportional income tax. The initial budget constraint is again $ABC$ and equilibrium hours of work are at $H_1$ (point $X$). A proportional income tax rotates the budget constraint from $ABC$ to $ABD$. Since the tax rate $t$ is the same for all levels of earnings, the slope of the budget constraint $ABD$ is reduced by a constant amount to $(I -$
With the tax equilibrium hours of work decrease to $H_2$ (point Y). The income effect the increase in hours of work from $H_1$ to $H_3$ (point X to Z), the substitution effect is the decrease in hours of work from $H_3$ to $H_2$ (point Z to Y). In this example, the substitution effect is larger than the income effect and hours of work decrease.

Figure 2.2 (b)

3. In the short run, fixed work schedules may constrain some people to a level of work hours that they would not voluntarily choose. There are, however, several options which provide some room for choice even in the short run. One is to switch to an occupation with more flexible work hours; a second is to remain in the present occupation but look for a job with a firm that does offer the desired work schedule. Other options include moonlighting or absenteeism. Over the long run additional forces come into play. If firms require employees to work longer hours than desired, they will incur higher costs from turnover and low productivity. At the same time, other firms that did offer the desired work schedule would be able to attract workers at a lower wage. The firms with longer than desired hours, therefore, would be placed at a competitive disadvantage and, in order to maximize profits, would be induced to cut their hours of work. This result will occur, however, only if workers are mobile and there are numerous employers to choose from. In the extreme case of a labor market with only one employer the competitive process is shortcircuited since workers have no other firms at which they could offer to work for lower wages in return for a more desirable work schedule.

4. In Figure 2.4 (a)–(c) the pre-TANF budget constraint is AB, the post-TANF budget constraint with $t = .50$ ACDB, and the post-TANF budget constraint with $t = 1.0$ is ACFB. In graph (a), with $t = .50$, the person's equilibrium hours of work was at zero (point C) where the indifference curve $I_1$ intersects the budget constraint $ACDB$. Given $t = 1.0$, the budget constraint becomes ACFB, but equilibrium hours of work remain zero.

In graph (b), with $t = .50$, the person's equilibrium hours of work are $H_1$ (point X) where the indifference curve $I_1$ is tangent to the budget constraint $ACDB$. Given $t = 1.0$, the budget constraint becomes ACFB, and the equilibrium hours of work fall from $H_1$ to zero (point C), given by the intersection or the indifference curve $I_2$ and ACFB.

In graph (c), with $t = .50$ the person is receiving TANF but her hours of work $H_1$ (point X) put her close to the break-even point (point D). Given $t = 1.0$, the budget constraint becomes ACFB, and equilibrium hours of work increase from $H_1$ to $H_2$ (point X to Y), given by the tangency of the indifference curve $I_2$ and ACFB.
The labor/leisure model explains the long-term decline in work hours as the result of a dominant income effect from the secular rise in real wages. The argument is illustrated below. The real wage in 1900 is $W_1$, giving rise to the budget constraint $AB$. Given the indifference $I_{1900}$, equilibrium hours of work are 53 per week. By 2004 the real wage has increased to $W_2$, causing the budget constraint to rotate to $AC$. Given the indifference curve $I_{2004}$, equilibrium hours of work fall to 40. The income effect caused by the wage increase is given by the decline in hours from point $X$ to point $Z$, the substitution effect is given by the increase in hours from point $Z$ to point $Y$. In this case, the income effect is larger, causing a net reduction in work hours.

As discussed in the text, the income effect set off by rising wages caused workers to demand additional leisure. In periods of full employment, competitive market forces will cause employers to reduce work hours lest they lose their workforce. During periods of substantial unemployment, however, the lack of jobs in the market reduces the pressure on firms to cut work hours. In order to obtain shorter work hours, therefore, workers use collective action in the form of collective bargaining and government legislation. Each is a type of institutional force that raises the cost of long work hours for firms, motivating them to reduce the work week as employees desire.

Compensating a worker for the time they commute to work essentially eliminates the time
cost of working. The effect is to change the budget constraint the worker faces from $ADC$ to $AB$ in Figure 2.6. If it takes a worker 30 minutes to get to and from work this reduces the available number of hours per week from 100 to 95. The optimal number of hours for this worker, with this fixed time cost of working is 95-$L_1$. If the employer compensated the worker for the travel time, the new optimal number of hours is 100-$L_2$. In this example, it appears as though the worker's desired number of hours has increased (100-$L_2$ is greater than 95-$L_1$).

Reimbursing the worker for parking expense essentially eliminates the worker's fixed monetary cost of working. The effect is to change the budget constraint the worker faces from $DC$ to $AB$ in Figure 2.7. This results in a pure income effect and, because leisure is a normal good, reduce the desired number of hours from 100-$L_1$ to 100-$L_2$.

(b) Equation (2B.16) can be used to calculate these elasticities

$$
\frac{\partial H}{\partial W} = \frac{\partial h}{\partial W} + W \frac{\partial h}{\partial Y}
$$

Using this formula, the gross wage elasticity is calculated as

$$
\frac{\partial H}{\partial W} = (0.024)(8.88/3.639) \approx 0.0586
$$

the income elasticity is calculated as

$$
W \frac{\partial h}{\partial Y} = (8.88)(-0.215) = .909
$$

and the compensated wage elasticity is calculated as
\[ \frac{\partial h}{\partial W} \frac{W}{H} - \frac{\partial H}{\partial W} \frac{W}{H} - W \frac{\partial h}{\partial Y} \approx 0.0586 + 1.909 - 1.9676 \]

(c) The substitution effect dominates in this case leading to an increase in hours of work when wages increase.