

SOLUTIONS TO TEXT PROBLEMS:

Quick Quizzes

1. The two most important sources of tax revenue for the federal government are the individual income tax and payroll taxes. The two most important sources of tax revenue for state and local governments are sales taxes and property taxes.
2. The efficiency of a tax system refers to how low the costs are of collecting a given amount of tax revenue. One tax system is more efficient than another if the same amount of tax revenue can be raised at a lower cost.

A tax system can be inefficient because of the deadweight losses that result when taxes distort the decisions that people make and because of the administrative burdens that taxpayers bear as they comply with the tax laws. An efficient tax system has low deadweight losses and small administrative burdens.

3. The benefits principle is the idea that people should pay taxes based on the benefits they receive from government services. It tries to make public goods similar to private goods by making those who benefit more from the public good pay more for it. The ability-to-pay principle is the idea that taxes should be levied on a person according to how well that person can shoulder the burden. It tries to equalize the sacrifice each person makes toward paying taxes.

Vertical equity is the idea that taxpayers with greater ability to pay taxes should pay larger amounts. Horizontal equity is the idea that taxpayers with similar abilities to pay taxes should pay the same amount.

Studying tax incidence is important for determining the equity of a tax system because understanding how equitable the tax system is requires understanding the indirect effects of taxes. In many cases, the burden of the tax is borne by people other than those who actually pay the tax.

Questions for Review

1. Over the past several decades, government has grown more rapidly than the rest of the economy. The ratio of government revenue to GDP has increased over time.
2. The two most important sources of revenue for the U.S. federal government are individual income taxes (about 44 percent of total revenue) and social insurance taxes (about 36 percent).
3. Corporate profits are taxed first when the corporate income tax is taken out of a corporation's income and again when the profits are used to pay dividends to the corporation's shareholders, which are taxed by the individual income tax.
4. The burden of a tax to taxpayers is greater than the revenue received by the government because: (1) taxes impose deadweight losses by reducing the quantity of goods produced and purchased below their efficient level; and (2) taxes entail a costly administrative burden on taxpayers.
5. Some economists advocate taxing consumption rather than income because taxing income discourages saving. A consumption tax would not distort people's saving decisions.

6. Wealthy taxpayers should pay more taxes than poor taxpayers because: (1) they benefit more from public services; and (2) they have a greater ability to pay.
7. Horizontal equity refers to the idea that families in the same economic situation should be taxed equally. The concept of horizontal equity is hard to apply because families differ in many ways, so it is not obvious how to tax them equitably. For example, two families with the same income may have different numbers of children and different levels of medical expenses.
8. The arguments in favor of replacing the current tax system with a flat tax include: (1) the flat tax would broaden the tax base and reduce marginal tax rates, improving economic efficiency; (2) the tax is simple, so the administrative burden of the tax system would be greatly reduced; (3) the tax could be collected at the income source rather than from the person receiving the income, reducing administrative costs; (4) the flat tax would eliminate the double taxation of corporate income; and (5) businesses would be able to deduct expenses for investment, which would encourage additional saving and investment.

The arguments against replacing the current tax system with a flat tax include: (1) the flat tax gives too little weight to the goal of vertical equity; and (2) the flat tax would be less progressive than the current tax system, with the wealthy paying less.

Problems and Applications

1. Government spending has grown over time as our society has come to rely on the government to provide a social safety net, including medical care, for everyone. The trend is likely to continue as the average age of the population increases.
2. The federal government had a budget surplus in 2001. As of 2002, policymakers expected budget deficits in 2002, 2003, and 2004.
3.
 - a. Over the past 39 years, the increase in revenue of the total government is attributable more to increases in state and local government revenue than to federal government revenue. In 1960, state and local government revenue was 32 percent of total government revenue; by 1999 it had risen to 41 percent.
 - b. Personal taxes account for a bit more of the total revenue of federal and state and local governments now as they did 39 years ago (36 percent in 1960, 41 percent in 1999); social insurance taxes account for a substantially greater proportion (13 percent in 1960, 24 percent in 1999); and corporate taxes account for a lower proportion (17 percent in 1960, 9 percent in 1999).
 - c. Transfer payments account for a much greater proportion of the total expenditures of federal and state and local governments now than they did 39 years ago (22 percent in 1960, 38 percent in 1999), while purchases account for a much smaller proportion (71 percent in 1960, 51 percent in 1999).
4.
 - a. If the number of retirees is rising and total expenditures are frozen, then benefits per retiree will decline over time. Since the number of workers is rising, albeit slowly, tax payments per worker would decline slowly over time.

- b. If benefits per retiree were frozen, total expenditures would rise quickly, along with the number of retirees. To pay for the increased expenditures, tax payments per worker would rise, since the number of workers isn't growing as rapidly as the number of retirees.
 - c. If tax payments per worker were frozen, total expenditures would rise slowly, at the same rate as the growth rate of the number of workers. Since the number of retirees is rising more rapidly, benefits per retiree would decline over time.
 - d. The answers to parts *a*, *b*, and *c* suggest there is no easy solution. Either workers will pay more per person or retirees will get fewer benefits per person. Policymakers may eventually be forced to compromise, both reducing benefits per retiree and increasing tax payments per worker.
5. If you earn \$20,000 a year, then you pay $\$20,000 \times 0.15 = \$3,000$ in federal income taxes, $\$20,000 \times 0.153 = \$3,060$ in federal payroll taxes, and $\$20,000 \times 0.04 = \800 in state income taxes, for a total tax bill of \$6,860. Your average tax rate is $\$6,860/\$20,000 = 0.343 = 34.3$ percent. Your marginal tax rate is $0.15 + 0.153 + 0.04 = 0.343 = 34.3$ percent.

If you earn \$40,000 a year, then you pay federal income taxes in two parts: 15 percent on the first \$27,050 of income and 27.5 percent on the amount above \$27,050, so your federal income taxes are $\$27,050 \times 0.15 = \$4,057.50$ plus $\$12,950 \times 0.275 = \$3,561.25$, for a total of \$7,618.75 in federal income taxes. You also pay $\$40,000 \times 0.153 = \$6,120$ in federal payroll taxes, and $\$40,000 \times 0.04 = \$1,600$ in state income taxes. Your total tax bill is \$15,338.75. Your average tax rate is $\$15,338.75/\$40,000 = 0.383 = 38.3$ percent. Your marginal tax rate is $0.275 + 0.153 + 0.04 = 0.468 = 46.8$ percent.
6. Excluding food and clothing from the sales tax is justified on equity grounds because poor people spend a greater proportion of their income on those items. By exempting them from taxation, the system makes the rich bear a greater burden than the poor. From the point of view of efficiency, however, excluding food and clothing from the sales tax is inefficient, since the incentives to purchase food and clothing rather than other items is likely affected by this tax exemption. This leads to an inefficient allocation of resources. In addition, since the demand for food and clothing is likely to be relatively inelastic, the deadweight loss from a tax would be relatively small (when compared with a tax on a good whose demand is relatively elastic).
7.
 - a. Because contributions to charity are tax deductible, people donate more to charity than they otherwise would.
 - b. Because sales of beer are taxed, people buy less beer than they otherwise would.
 - c. Because interest that a homeowner pays on a mortgage is tax deductible, homeownership is encouraged.
 - d. Because realized capital gains are taxed, but accrued gains are not, people sell assets that have fallen in value, but they don't sell assets that have appreciated, so that they can avoid paying taxes on their gains.
8. If the state raises its sales tax from 5 percent to 6 percent, it isn't plausible that sales tax revenue will increase 20 percent. The increase in the tax rate is 20 percent, so the only way tax revenue could increase 20 percent would be if total spending didn't fall in response to the tax increase, which is unlikely. Instead, the higher tax would raise the price of goods, so people would spend less. Thus tax revenue might go up, because the tax rate is higher, but by less

than 20 percent. There is even some possibility that tax revenues will fall.

9.
 - a. Because a woman who earns income loses TANF benefits, the tax discourages labor supply; it is like a higher tax on her wages.
 - b. The subsidy from the EITC encourages labor supply, since it provides a subsidy.
 - c. The advantage of eliminating TANF and putting the money into EITC is that it would make people more self-sufficient by giving them the incentive to work. The disadvantage is that their children would receive less care, since their parents would be working.
10. The effect of the Tax Reform Act of 1986 on interest payments was to reduce consumer debt and increase home equity debt. People started financing general expenditures through home equity loans and paid down their mortgages less quickly.
11.
 - a. The fact that visitors to many national parks pay an entrance fee is an example of the benefits principle, since people are paying for the benefits they receive.
 - b. The fact that local property taxes support elementary and secondary schools is an example of the ability-to-pay principle, since if you own more expensive property you must pay more tax.
 - c. The setup of airport trust funds is an example of the benefits principle, since use of the airport generates a tax that pays for upkeep of the airport.
12.
 - a. For the proportional tax system, the average tax rate is 25 percent whether a person earns income of \$50,000, \$100,000, and \$200,000.

 For the regressive tax system, the average tax rate is 30 percent for someone earning \$50,000, 25 percent for someone earning \$100,000, and 20 percent for someone earning \$200,000.

 For the progressive tax system, the average tax rate is 20 percent for someone earning \$50,000, 25 percent for someone earning \$100,000, and 30 percent for someone earning \$200,000.
 - b. For the proportional tax system, the marginal tax rate as income rises from \$50,000 to \$100,000 is the increase in taxes (\$12,500) divided by the increase in income (\$50,000) = 25 percent. The marginal tax rate as income rises from \$100,000 to \$200,000 is the increase in taxes (\$25,000) divided by the increase in income (\$100,000) = 25 percent.

 For the regressive tax system, the marginal tax rate as income rises from \$50,000 to \$100,000 is the increase in taxes (\$10,000) divided by the increase in income (\$50,000) = 20 percent. The marginal tax rate as income rises from \$100,000 to \$200,000 is the increase in taxes (\$15,000) divided by the increase in income (\$100,000) = 15 percent.

 For the progressive tax system, the marginal tax rate as income rises from \$50,000 to \$100,000 is the increase in taxes (\$15,000) divided by the increase in income (\$50,000) = 30 percent. The marginal tax rate as income rises from \$100,000 to \$200,000 is the increase in taxes (\$35,000) divided by the increase in income (\$100,000) = 35 percent.
 - c. In the proportional tax system, the average tax rate equals the marginal tax rate. In the regressive tax system, the marginal tax rate is less than the average tax rate and

both tax rates decline as income rises. In the progressive tax system, the marginal tax rate is greater than the average tax rate and both tax rates rise as income rises. The marginal tax rate is relevant to someone deciding whether to accept a job that pays slightly more than her current job, since it tells her how much of the extra income she will be able to keep after taxes. For judging the vertical equity of the tax system, the average tax rate is relevant, since vertical equity suggests that people with a greater ability to pay should pay a larger amount.

13. The efficiency justification for taxing consumption rather than income is that taxing income discourages saving. If the United States were to adopt a consumption tax, the U.S. tax system would become less progressive because the poor spend a greater proportion of their income than the rich. However, tax rates could be modified or deductions increased to make the tax more progressive.
14. Eliminating the tax deduction for meals would reduce the amount of lunches to which corporate executives take clients. But the incidence would not be borne entirely by corporations, but instead by eating and drinking establishments that would lose a substantial portion of their business.