## An Overview of Federal Taxation

## Solutions to Problem Materials

## Discussion Questions

1-1 A tax base is the amount upon which a tax is levied. The tax base for the Federal income tax is called "taxable income" and is the taxpayer's total income less exclusions and deductions that might be available to the taxpayer. (See Exhibits 1-3, 1-4, 1-5, and 1-6 and pp. 1-13 through 1-21.)

The tax base for the Federal estate tax is called "total taxable transfers" and is computed as follows:
Gross estate (FMV at date of death of all of the decedent's assets)

- Funeral and administrative expenses
- Charitable bequests
- Marital deduction
$=$ Taxable estate
$+\quad$ Taxable gifts made after 1976
$=$ Total taxable transfers
(See Exhibit 1-5 and pp. 1-16 through 1-18.)
The tax base for the Federal gift tax is total taxable transfers to the date of the gift and is computed as follows:


## FMV of gifts made during the year

- Annual exclusion (\$15,000 per donee in 2019)
- Charitable bequests
- Marital deduction
$=$ Taxable gifts for the current year
+ Taxable gifts made in all prior years
$=$ Total taxable transfers
(See Exhibit 1-6 and pp. 1-19 through 1-21.)
1-2 A proportional tax rate is one that is a constant percentage regardless of the size of the tax base (i.e., as the base changes the rate remains the same). (See Example 10 and p. 1-11.) A progressive tax structure is one in which a higher percentage rate is applied to increasing increments of the tax base (i.e., as the base increases (decreases) the rate increases (decreases)). (See Example 9 and p. 1-11.)

A marginal tax rate of any rate structure is that percentage at which the next dollar added to the tax base will be taxed. In a proportional tax rate structure, the marginal tax rate remains the same through all levels of taxation. The tax impact of an additional dollar of income remains the same through all levels of taxation. In a progressive tax structure, the marginal tax rate increases as the level of taxable income increases. The tax impact of an additional dollar of income or deduction varies as the level of taxable income varies and thus the total tax rate is determined by the level of income which is taxed. However, in both
cases, the tax impact of an additional dollar of income or an additional deduction can be determined. (See Examples 4 and 5 and p. 1-8 and 1-9.)
1-3 In the technical sense (i.e., in terms of the definitions of proportional and regressive rate structures), the media have reached an erroneous conclusion. However, when the nature of these taxes is considered relative to the taxpayer's ability to pay, the media is correct.

According to the technical definition, a regressive tax rate structure is one where the rate decreases (increases) as the base increases (decreases). In contrast, in a proportional tax rate structure, the rate is a constant percentage of the base. In the technical sense, both sales taxes and social security taxes are proportional taxes because the rate is always the same regardless of the size of the base. This is because the tax rates are defined in terms of the base on which they are levied.

Relative to the taxpayer's ability to pay, however, proportional taxes are regressive. For example, as the taxpayer's ability to pay grows or his income rises, the taxpayer's total sales taxes become a smaller percentage of income. Because the rate becomes smaller as the criterion for paying increases, the tax is regressive. (See pp. 1-11 and 1-12.)
1-4 A deduction is a reduction in the gross (total) amount that must be included in the taxable base. A tax credit is a dollar for dollar offset against a tax liability. (See Examples 3 and 12 and pp. 1-6 and 1-12.)

The value of a deduction is a function of the taxpayer's marginal tax rate. For example, if a deduction equals $\$ 1,000$ for a taxpayer in the $20 \%$ bracket, the value of that deduction would be $\$ 1,000 \times 20 \%$ or $\$ 200$. The $\$ 200$ is the amount of tax that would be saved by using the $\$ 1,000$ deduction. The value of a credit, on the other hand, is the full value of the amount of the credit (e.g., a $\$ 1,000$ credit will save the taxpayer $\$ 1,000$ ). (See Examples 6 and 12 and pp. 1-9 and 1-12.)

Accordingly, if the taxpayer is faced with a choice between a deduction and a credit, he must use his marginal tax bracket to determine the relative worth of the two amounts. If, for example, the taxpayer is choosing between a $\$ 1,000$ deduction or a credit of $15 \%$ of the $\$ 1,000$ expenditure, and assuming he is in the $20 \%$ bracket, he would go through the following analysis:

- Value of the credit: $15 \% \times \$ 1,000=\$ 150$
- Value of the deduction: $20 \%$ (marginal tax rate) $\times \$ 1,000=\$ 200$

In this case, the taxpayer would choose the $\$ 1,000$ deduction worth $\$ 200$ over the $\$ 150$ credit.
1-5 Significant differences between computing a corporation's taxable income and computing an individual's taxable income include the following:

- Only individual taxpayers have "adjusted gross income" (AGI) and deductions "for" or "from" AGI. Individuals can claim deductions from AGI only if they exceed the standard deduction (except for the qualified business income deduction). Corporations simply compute gross income and then reduce it with allowable deductions to compute taxable income.
- Only individual taxpayers have a standard deduction or itemized deductions.
- Only individual taxpayers are entitled to a credit for children ( $\$ 2,000$ per qualifying child 16 or under and $\$ 500$ for any other dependents).
(Compare Exhibits 1-3 and 1-4; see pp. 1-14 and 1-15.)
1-6 The principal reason that Congress continues the pay-as-you-go requirement is that it collects the tax when taxpayers have the money to pay it. Absent withholding, individuals may not be able to control their expenditures well enough to have enough money left to pay their taxes at the end of the year.

In addition, the system reduces the possibility of tax evasion since the government collects the tax before the taxpayer has a chance to avoid it. Moreover, withholding, as well as estimated tax payments, ensures a steady stream of reve-nue-cash flow-that the government needs to discharge its responsibilities.

The pay-as-you-go system or withholding has an interesting history that is not discussed in the text. The system appears to have its origin in the U.S. as long ago as the Civil War when Treasury withheld taxes owed by federal employees under the short-lived income tax adopted in 1862 and eliminated in 1864. However,
withholding was resurrected in 1913 with the passage of the Sixteenth Amendment and the ratification of the income tax. Initially, taxes were required to be withheld at the source for all employees. However, the system was so disliked by employers and their employees that it was eliminated in 1917. Withholding surfaced again with the passage of the Social Security Act of 1935 but only for Social Security taxes.

Prior to World War II, an individual that owed taxes on his or her income for the year would pay such tax during the following year in quarterly installments. As a practical matter, very few actually had to pay income taxes-less than 4,000,000 returns were filed in 1939-so there was little need for withholding. However, this changed with the beginning of the World War II in 1940.

The country's entry into World War II required the government to increase taxes significantly in order to fund America's war effort. In addition, the War also prompted a change in the method of collecting taxes. At that time, the now famous economist, Milton Friedman, who was with the Treasury at that time, explained the problem. "It was clear to all of us at the Treasury, as we set out to multiply the amount of revenue to be collected from the personal income tax, that it would be impossible to do so unless we could develop a system to collect the taxes as the income was earned, not a year later." (See his memoirs, Two Lucky People.)

However, Congress could not easily change to a pay-as-you-go system since in the year of the switch taxpayers would have to pay two years' taxes in a single year--the amount due under the old system and an amount due under the new system. As might be imagined, the public strongly objected to the possibility of double taxation. After heated debate, Congress ultimately addressed the two tax issue with a complicated process that essentially forgave a substantial portion of the second tax. With this problem solved, Congress enacted the Current Tax Payment Act that became law on June 9, 1943. The new law paved the way for withholding, which has been a major feature of the income tax ever since.

On the longevity of withholding Friedman commented, "At the time, we concentrated single-mindedly on promoting the war effort. We gave next to no consideration to any longer-run consequences. It never occurred to me at the time that I was helping to develop machinery that would make possible a government that I would come to criticize severely as too large, too intrusive, too destructive of freedom. Yet, that was precisely what I was doing."

The importance of withholding in the tax collection process cannot be over emphasized, As Treasury once noted, withholding "greatly eased the collection of the tax." In the same breath, Treasury also explained that it "greatly reduced the taxpayer's awareness of the amount of tax being collected, i.e., it reduced the transparency of the tax, which made it easier to raise taxes in the future." In effect, with pay as you go, taxpayers would not even know they paid the tax. Never was this more apparent than what occurred after the enactment of the Tax Cuts and Jobs Act of 2017 (TCJA).

The TCJA substantially reduced the tax that most people paid. However, at tax time, many people, who year after year rely on a tax refund, were upset and had sticker shock when they failed to receive one-or one that was smaller than they had received in the past. Article after article, news program after news program, tweet after tweet, all reported how upset people were with the government and the IRS because their refunds were lower. Apparently, these people were oblivious to the fact that their withholding had gone down during the year. As these events suggest, withholding can, as Bob Kerr, head of the National Association of Enrolled Agents (a trade group for tax preparers) pointed out, "most people don't know how much they pay in taxes ... and "the refund is the wrong metric to measure it." While getting a big refund feels good, what the taxpayer is actually doing is giving the government an interest-free loan. And this phenomenon is all made possible through the power of withholding!

See Higgs, "Milton Friedman Did Not Foresee the Long-Term Implications of the 1943 Tax-Withholding Law," originally published by FEE Foundation for Economic Education at https://fee.org/articles/wartime-origins-of-modern-in-come-tax-withholding and Bernard, Tara. "Shocked by Your Tax Refund? Next Year Could Be Worse Unless You Act Now." The New York Times, April 14, 2019 and https://www.nytimes.com/2019/04/14/your-money/tax-refund-paycheck-withholding.html.
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1-7 The marital deduction is the deduction allowed for gift and estate tax purposes for amounts transferred by one spouse to the other spouse. The amount of the deduction is unlimited. In other words, one spouse may transfer an unlimited amount of property to the other spouse either by gift or, after death, through the estate and pay no tax on the transferred amount. Of course, without further action, the recipient spouse would pay gift or estate tax on a subsequent transfer. For estate tax purposes, the marital deduction effectively postpones the tax until the surviving spouse dies. Note, however, beginning in 2010, the portability rule of § 2010(c) allows the surviving spouse to use the unused credit of his or her spouse for taxable transfers during life (i.e., the gift tax) or at death (i.e., the estate tax). (See p. 1-17.)
1-8 In 2020, the estate tax credit (the unified credit) is used to offset up to $\$ 4,577,800$ of gift or estate taxes, the equivalent of $\$ 11.6$ million in taxable gifts or a $\$ 11.6$ million taxable estate. Note that any of the credit (i.e., exemption) used during life to offset gift taxes is not available at death. Thus, in 2020, the total amount of trans-fers-including both those made during life and at death that can be sheltered from gift and estate taxes is $\$ 11.6$ million. (See Example 13 and pp. 1-16 through 1-18.)
1-9 The annual exclusion for the Federal gift tax is $\$ 15,000$ per donee in 2020. A married individual may elect to join with his or her spouse in making gifts, and thus, husband and wife together have a $\$ 30,000$ annual exclusion per donee in 2020. (See Examples 16 and 17 and pp. 1-19 through 1-21.)

Ignoring the unified credit, a widow interested in making gifts to her daughter and seven grandchildren may make a $\$ 15,000$ gift to each of them tax-free. Thus, $\$ 120,000$ of gifts ( 8 donees $\times \$ 15,000$ ) could be made annually without a gift tax.
1-10 The gift-splitting election is a means whereby a husband and wife may elect to treat $1 / 2$ of the gifts made by one spouse as if made by the other spouse (i.e., split gifts between them) even though the property donated is owned by only one of the spouses. Through the gift-splitting election, the spouses may make use of two annual exclusions and two lifetime applicable credit amounts in order to reduce their gift tax liability. (See Example 17, p. 1-20.)

For many purposes, a married couple is considered to be one taxpaying unit. For this reason, Congress allowed a married couple to file a joint income tax return; through that they split their income regardless of which spouse actually earned it. In this way, a higher-bracket spouse's income is split with a lower-bracket spouse, and thus the marginal impact of the tax rates is reduced. Similarly, with the gift-splitting election, the husband and wife are considered to be one taxpaying unit and thus are able to share their gift giving. Note, however, that there are no joint gift tax returns (like income tax returns).

It should be noted that a married couple cannot file a joint tax return for gift tax purposes. Consequently, to take advantage of gift splitting, each spouse must file his or her own separate gift tax return. For example, assume a married couple, H and W , give $\$ 20,000$ to their daughter as a wedding present. Even though it is unlikely the couple will pay any tax due to gift splitting and the unified credit, both must file a gift tax return if they want to take advantage of gift splitting. H must file a return where he indicates that he agrees to split gifts with W and will report his half of the gift, $\$ 10,000$, and use his gift tax exclusion and unified credit to eliminate the tax on the $\$ 10,000$ gift. W would do the same, resulting in two gift tax returns. Unfortunately, due to the complexity of the gift tax return, H and W probably will need to hire a tax professional to prepare two returns reporting taxable gifts for which they owe no tax.
1-11 An estate tax is a tax on the right to transfer property, whereas an inheritance tax is a tax on the right to receive property at death. An estate tax is imposed upon the decedent's estate, whereas an inheritance tax is imposed on the heirs on the receipt of property from an estate. The major difference is that the estate tax rate is applied to the entire estate, while inheritance tax rates are applied to the amounts received by the heirs and such rates vary depending on the relationship between the decedent and the heir. (See Example 19 and p. 1-21.)
1-12 The FICA tax is imposed on both an employee and his or her employer if the employee is eligible for Social Security benefits. The Federal unemployment tax, FUTA, is imposed on employers who pay wages of $\$ 1,500$ or more during any calendar quarter in the calendar year, or who employ at least one individual on each of
some 20 days during the calendar year or previous year. The purpose of the FICA tax is to fund the Social Security system. The purpose of the FUTA tax is to fund unemployment benefit programs of the states.

With respect to FICA, both employees and the employer bear the burden of the tax equally. With respect to FUTA, only the employer pays this tax. (See pp. 1-22 through 1-30.)
1-13 The maximum FUTA (federal unemployment tax) tax is $6 \% \times \$ 7,000$, or $\$ 420$ per employee, per year. If the employer has three employees, then his FUTA payment is $3 \times \$ 420$, or $\$ 1,260$. The maximum FUTA tax credit allowed against an employer's FUTA tax liability for any similar tax paid to a state is currently $5.4 \%$ of the covered wages or a maximum of $\$ 378(\$ 7,000 \times 5.4 \%)$ per employee. Hence, in this case, the credit for FUTA taxes paid to the state would be a maximum of $\$ 378 \times$ 3 , or $\$ 1,134$. Therefore, the amount of FUTA taxes paid to the Federal government would be $\$ 126$ ( $\$ 1,260-\$ 1,134=\$ 126)$. Alternatively, assuming the maximum credit of $5.4 \%$ can be claimed, the rate is $.6 \%$ for each employee ( $6 \%-5.4 \%$ ) and the tax due could be computed as follows: $[(.6 \% \times \$ 7,000=\$ 42$ each $) \times 3=\$ 126]$. (See pp. 1-30.)
1-14 A sales tax is a tax imposed on the gross receipts from the retail sale of tangible personal property and certain services. A use tax is a tax imposed on the use within a state or local jurisdiction of tangible property on which a sales tax was not paid. The tax rate of the use tax normally equals that of the taxing authority's sales tax. (See p. 1-31.)

The purchaser might simply go to the neighboring state and purchase an auto there. Thus, the purchaser would avoid state A's high sales tax. State A might discourage this plan by enacting a use tax on the auto equal to the sales tax in state $A$. Thus, there would be no advantage to traveling to state B to purchase the car.
1-15 a. The term "tax expenditure" refers to the estimated amount of revenue lost for failing to tax a particular item, for granting a certain deduction, or for allowing a credit. In effect, the term refers to the amount that would have been spent had the government subsidized or financed the activity through direct payments rather than indirectly through a reduction of the taxpayer's tax liability. For example, the purchase of business machinery, an activity which Congress has chosen to favor because it is believed such expenditure results in growth in the national economy, is rewarded through depreciation deductions. Almost always, tax incentives come about because Congress is interested in favoring a particular type of activity and has decided to reward those who engage in this activity with favorable tax treatment. (See p. 1-33.)
b. Some have argued that tax incentives lead to waste, inefficiency, and inequity, while proponents of tax incentives take the opposite view. A brief description and discussion of some of the pros and cons of tax expenditures vis-a-vis direct expenditures are presented below. (These were derived from Surrey's "Tax Incentives as a Device for Implementing Government Policy: A Comparison with Direct Government Expenditures," 83 Harvard Law Review 705 (1970). A more complete discussion can be found in that article.)

- Tax incentives are often seen as clear-cut; they involve far less governmental supervision and detail. Proponents argue that there is an existing system (i.e., the tax system) that enables easy implementation without the need to set up additional bureaucracy. Surrey argues that this is not true.
- Tax incentives are often urged on the ground that the particular problem is great, and that the government must assist in its solution by enlisting the participation of the private business (e.g., enacting a jobs credit will enlist the aid of business to solve the problem of unemployment). According to Surrey, this in itself does not lead to the conclusion that tax incentives should be used rather than a direct expenditure.
- Proponents of tax incentives believe that they promote private decision making, rather than government-centered decision making, which inevitably leads to greater success in achieving the government's objective.
- It is generally argued that tax incentives are inequitable, since they are worth more to the high-income taxpayer than to the low-income taxpayer, and they do not benefit those who are outside the tax system because their
incomes are low, they have losses, or they are exempt from tax. This criticism is often valid as to the general type of tax incentives.
- One argument states that tax incentives, by dividing the consideration and administration of government programs, confuse and complicate that consideration in Congress, in Administration, and in the budget process.
- Opponents of tax incentives argue that incentives keep tax rates higher by reducing the tax base and thus, lead to reduced revenues.
(See pp. 1-32 and 1-33.)
1-16 1. That the fairest tax is one that someone else must pay is obviously a facetious statement, but no doubt some taxpayers adopt this maxim. The fairest tax system is one that treats all persons who are in the same economic situation in the same fashion. Accordingly, a tax system that fails to tax one individual and taxes another who is in exactly the same economic situation is treating both individuals unfairly. (See pp. 1-33 through 1-34.)

2. The benefits one obtains from paying taxes are difficult to trace or measure, and to use such criteria to measure the tax rate of a particular individual would introduce immense complication into the process. Generally speaking, one pays taxes in order to support a system of government that works for the public good and expends in order to promote the commonwealth. Although certain individuals may benefit indirectly from these expenditures (e.g., a motel owner by construction of a new highway), the expenditures as a whole are used for a public good and not to serve private purposes. (See pp. 1-32 through 1-33.)
3. A head tax does not take into account the different economic circumstances in which various individuals find themselves and thus would refuse to differentiate among individuals based on their ability to pay. A canon of an equitable tax system has always been that ability to pay should differentiate among taxpayers so that those who could pay more would pay more. Nevertheless, a head tax would meet the other criteria: it would be certain and not arbitrary, low, and definitely difficult to avoid. (See pp. 1-33 through 1-34.)
4. The use of the governmental printing press to finance operations has been used in many countries and is still used in some countries. If done on a large scale, the currency is rapidly depreciated and all money loses its value. All savings would depreciate and only those assets that hold their value in inflationary times (e.g., real property) would be worth having. Financial assets would rapidly become worthless. (See pp. 1-32 and 1-33.)

## Problems

1-17 A single person with a taxable income of $\$ 45,000$ would be in the $22 \%$ tax bracket. Assuming marginal rates are $22 \%$ in 2020 and $12 \%$ in 2021 , the value of a deduction is the dollar value of that deduction multiplied by the taxpayer's marginal tax rate. In this case, the value of the $\$ 1,000$ deduction in 2020 is $\$ 220(\$ 1,000 \times 22 \%)$ and the value of the same deduction in 2021 is $\$ 120(\$ 1,000 \times 12 \%)$, so T could expect a tax savings of $\$ 100(\$ 220-\$ 120)$. Whether it is possible to accelerate the deduction is a question pursued in later chapters. (See Example 6 and p. 1-9.)

1-18 a. A "given dollar amount" is the cumulative sum of the taxes determined for each previous bracket of income. The tax for each bracket amount of income is determined by multiplying the marginal rate by the bracket amount of income. The 2020 tax rate schedule for single taxpayers and the derivation of the "given" amounts are shown below.

| Taxable Income (Single Taxpayers) |  |  |  |  | Pay |  | + | \% on Excess |  | f the Amount Over |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Over |  |  | No | ot Over |  |  |  |  |  |  |  |
|  | \$ 0 |  |  | 9,875 | \$ | 0 | + |  | 10\% | \$ | 0 |
| 9,875 |  |  |  | 40,125 |  | 987.50 | + |  | 12\% |  | 9,875 |
| 40,125 |  |  |  | 85,525 |  | 4,617.50 | + |  | 22\% |  | 40,125 |
| 85,525 |  |  |  | 63,300 |  | 14,605.50 | + |  | 24\% |  | 85,525 |
| 163,300 |  |  |  | 207,350 |  | 33,271.50 | + |  | 32\% |  | 163,300 |
| 207,350 |  |  |  | 18,400 |  | 47,367.50 | + |  | 35\% |  | 207,350 |
| 518,400 |  |  |  |  |  | 156,235 | + |  | 37\% |  | 518,400 |
| Bracket |  |  |  |  | Spread |  | Rate | Amount |  | Cumulative |  |
| \$ | 0 | \$ | 9, | ,875 | \$ | 9,875 | 10\% | \$ | 987.50 | \$ | 987.50 |
| 9,875 |  |  |  | ,125 |  | 30,250 | 12 |  | 3,630 |  | 4,617.50 |
| 40,125 |  |  |  | ,525 |  | 45,400 | 22 |  | 9,988 |  | 14,605.50 |
| 85,525 |  |  | 163, | ,300 |  | 77,775 | 24 |  | 18,666 |  | 33,271.50 |
| 163,300 |  |  | 207, | ,350 |  | 44,050 | 32 |  | 14,096 |  | 47,367.50 |
| 207,350 |  |  | 518, | ,400 |  | 311,050 | 35 |  | 108,867.50 |  | 156,235 |
| 518,400 |  |  |  |  |  |  | 37 |  |  |  |  |

b. The tax for a single taxpayer with taxable income of $\$ 50,000$, using the 2020 rate schedule is $\$ 6,790(\$ 4,617.50+[22 \% \times(\$ 50,000-\$ 40,125=\$ 9,875)])$.
c. The marginal tax rate is 22 percent. (See Examples 4 and 5, pp. 1-7 through 1-9.)
d. The average tax rate is $13.58 \%$ ( $\operatorname{tax} \$ 6,790 \div$ taxable income of $\$ 50,000$ ). (See Example 7, p. 1-9.)
e. The effective tax rate is $8.49 \%$ [tax $\$ 6,790 \div$ economic income of $\$ 80,000$ (\$50,000 taxable income $+\$ 30,000$ tax-exempt income)]. (See Example 8, p. 1-10.)

1-19 a. There are two concepts of tax equity to be used in evaluating the fairness of any tax: vertical and horizontal equity. Horizontal equity is deemed to exist when taxpayers in similar situations pay similar taxes. Vertical equity exists when taxpayers with more ability to pay in fact pay relatively more tax than taxpayers with less ability to pay. If a taxpayer's means to pay is adequately captured by his or her taxable income, then one could easily conclude that this tax is fair, since taxpayers in the same situation (here, the same taxable income) pay identical taxes. Many would argue, however, that taxable income is not a good proxy for a taxpayer's ability to pay, and no conclusion could be made concerning the fairness of this tax. These persons might argue that the tax does not take into account the cost of living, which might differ according to location, or a particular disability that the taxpayer or his family may have.

No statements can be made with respect to vertical equity because no information is provided regarding how taxpayers in different situations are treated. (See pp. 1-34 and 1-35.)
b. As noted above, vertical equity implies that taxpayers with more ability to pay in fact pay relatively more tax than those with less ability to pay. Although $S$ pays absolutely more tax in this case- $\$ 2,000$ versus $\$ 1,000$-he does not pay relatively more. Both R and S pay tax equal to $5 \%$ of their taxable income. Thus, most would argue that the tax is inequitable. Of course, this argument holds true only to the extent that taxable income is a good surrogate for ability to pay. (See pp. 1-34 and 1-35.)

1-20 Property taxes may be subject to the "fairness" argument on any number of grounds. Most of the time commentators assert that fairness is a function of ability to pay and property taxes may fail because they are not linked to ability to pay the tax. In the context of property taxes, homeowners find that they may own less property than a neighbor or have a less desirable house but nonetheless their property is appraised at a higher value due to a variety of circumstances. Their property may have been appraised more recently than others or different appraisal boards may use different criteria with which to value the property. Others believe that property taxes are inherently unfair because they do not relate to income or wealth. A poorer family may pay much more of their disposable income for property taxes than a wealthy family since property taxes do not relate to income. If one makes the assumption that wealthier people should pay more taxes, clearly property taxes cannot meet that standard of fairness.
1-21 a. False. The average tax rate is calculated by dividing the tax by the tax base. The tax base includes only income amounts subject to tax. Accordingly, tax-exempt income would have no impact on the taxpayer's average tax rate. (See p. 1-9.)
b. False. The marginal tax rate of any rate structure is that percentage at which the next dollar added to the tax base will be taxed. The tax base includes only income amounts subject to tax. Accordingly, tax-exempt income would have no impact on the taxpayer's marginal tax rate. (See p. 1-7.)
c. True. The taxpayer's effective tax rate is computed by dividing the tax by the taxpayer's total economic income. Tax-exempt income would be included in the taxpayer's economic income and accordingly would cause the taxpayer's effective tax rate to decrease. (See pp. 1-10 and 1-11.)
1-22 a. False. Sales tax are not progressive since a progressive tax structure is one in which an increasing percentage rate is applied to increasing increments of the tax base. The sales tax percentage remains constant at all volumes of sales for all income levels. (See p. 1-11.)
b. True. Sales taxes generally occupy a smaller percentage of total economic income as total economic income rises. In this sense sales taxes are perceived to be regressive. (See p. 1-12.)
c. False. See answer b above. (See p. 1-11.)
d. True. A regressive tax is one in which a decreasing percentage rate is applied to increasing increments of the tax base. No tax is structured in this way. (See p. 1-12.)

1-23 The decision must be made in light of the taxpayer's marginal tax rate. Presumably H and W with taxable income of $\$ 700,000$ would have a marginal tax rate is $37 \%$ and L and M with taxable income of $\$ 70,000$ would have a marginal tax rate is $12 \%$. As explained below, given those assumptions, then it makes sense for H and W to buy the Indiana bonds but it would be unwise for $L$ and $M$ to buy the Indiana bonds.

If the high bracket taxpayers, H and W , buy State of Indiana bonds paying $6 \%$, their interest income from the bonds is $\$ 60$ annually ( $\$ 1,000 \times 6 \%$ ), all of which they keep since it is not subject to tax. In other words, their after-tax yield is $6 \%$. If they buy taxable AT\&T bonds their interest income would be $\$ 80(8 \% \times$ $\$ 1,000$ ), but they would pay federal tax of $37 \%$ on the interest or $\$ 29.60(37 \% \times$ $\$ 80=\$ 29.60$ ) and keep only $\$ 50.40(\$ 80-\$ 29.60)$ of the $\$ 80$ they received. Thus, their after-tax yield on the $8 \%$ bonds would be $5.04 \%[8 \%-(37 \% \times 8 \%=2.96 \%)]$. Hence they are better off by $\$ 9.60(\$ 60-\$ 50.40)$ if they buy State of Indiana bonds.

If $L$ and $M$ buy State of Indiana bonds, they will earn $\$ 60(\$ 1,000 \times 6 \%)$ of interest and will keep all of it. Their after-tax yield is $6 \%$. If they buy AT\&T bonds, they will earn $\$ 80$ of interest and keep $\$ 70.40$. They pay tax of $\$ 9.60(12 \% \times \$ 80)$. Thus, their after-tax yield on the $8 \%$ bonds would be $7.04 \%[8 \%-(12 \% \times 8 \%=$ $.96 \%)$ ]. Hence they are better off by $\$ 10.40(\$ 70.40-\$ 60)$ if they buy the taxable AT\&T bonds since they are in the lowest marginal tax bracket. The result is summarized below.

|  | H \& W | $L \& M$ |
| :---: | :---: | :---: |
| Marginal tax rate . | 37\% | 12\% |
| AT\&T Bonds: | 8\% | 8\% |
| After tax yield |  |  |
| $8 \%-(37 \% \times 8 \%=2.96 \%$ tax $)$ | 5.04\% |  |
| $8 \%-(12 \% \times 8 \%=.96 \%$ tax $)$ |  | 7.04\% |
| Indiana Bonds:. | 6\% | 6\% |
| After tax yield |  |  |
| Municipal bonds tax-exempt | 6\% | 6\% |
| Best alternative: |  |  |
| Indiana bonds | 6\% |  |
| AT\&T bonds. |  | $\underline{\text { 7.04\% }}$ |

(See pp. 1-7 through 1-9.)
1-24 A tax expenditure is the estimated amount of revenue lost for failing to tax a particular item. (See p. 1-33.)
a. Yes. This is a tax expenditure because Congress is subsidizing a small business owner by allowing a tax deduction for fuel.
b. Yes. This is a tax expenditure since Congress is subsidizing charities by making contributions to them deductible.
c. This would not be a tax expenditure since revenue is not lost, but merely deferred for a period of time.
d. Yes. This is a tax expenditure since Congress is subsidizing owners of real estate.
e. Yes. This is a tax expenditure since the credit effectively subsidizing a particular kind of automobile.
f. Yes. This is a tax expenditure since the deduction is designed to subsidize home ownership.
1-25 A tax expenditure is the estimated amount of revenue lost for failing to tax a particular item. (See p. 1-33.)
a. Since administrative costs are less than through other forms of government financial assistance, this tax expenditure would produce an advantage.
b. The fact that beneficiaries are readily identifiable would clearly be an advantage.
c. Presumably the limiting of a particular expenditure to those entitled to receive it would be the advantage Congress intended.
d. The ready assessment of costs and budgetary effects is an advantage.
e. It is not clear whether the rise and fall of benefits without direct approval is an advantage or a disadvantage. If this is what Congress intended than presumably it is an advantage.
f. Tax expenditures tend to be windfalls to all taxpayers even if some do not deserve such windfalls. Consequently, a targeted needy group may not receive the total benefits. Thus, this is a disadvantage.
g. Tax expenditures are made by specific tax law changes and as a result such expenditures introduce a great deal of complexity into the tax system that otherwise would not exist.
1-26 a. The amount of M's taxable gifts in 2020 is $\$ 70,000$ computed as follows:

| To Son |  | To Daughter |  |
| :---: | :---: | :---: | :---: |
| Value of gift. | \$50,000 | Value of gift. . . . . . . . . . . | \$50,000 |
| Annual exclusion. | $(15,000)$ | Annual exclusion........ | $(15,000)$ |
| Taxable gift | \$35,000 | Taxable gift | \$35,000 |
| To Niece |  |  |  |
| Value of gift. | \$10,000 |  |  |
| Annual exclusion. | $(15,000)$ |  |  |
| Taxable gift . | \$ 0 | Total taxable gifts $=\ldots \ldots$ | \$70,000 |

b. The amount of M and her husband's taxable gifts in 2019 is $\$ 40,000$ computed as follows:

| To Son |  | To Daughter |  |
| :---: | :---: | :---: | :---: |
| Value of gift. | \$50,000 | Value of gift. | \$50,000 |
| Annual exclusion. | $(30,000)$ | Annual exclusion... | $(30,000)$ |
| Taxable gift | \$20,000 | Taxable gift | \$20,000 |
| To Niece |  |  |  |
| Value of gift. | \$10,000 |  |  |
| Annual exclusion. | (30,000) |  |  |
| Taxable gift . . . | \$ 0 | Total taxable gifts = . | \$40,000 |

(See Examples 16 and 17 and pp. 1-19 and1-20.)
1-27 a. Post-1976 taxable gifts are added to the taxable estate in arriving at the unified transfer tax at death.
b. Post-1976 gifts are added to the taxable estate and have the effect of increasing the rate at which the unified transfer tax impacts upon the decedent's taxable estate. This occurs because the addition of post-1976 taxable gifts to the decedent's taxable estate increases the amount of property taxed and thus pushes the estate into a higher marginal tax bracket.
(See Exhibits 1-5 and 1-6 and pp. 1-17 through 1-19.)
1-28 The estate tax in 2020 is $\$ 2,268,000$ as computed below.

| Gross estate |  |  |
| :---: | :---: | :---: |
| Cash. | \$16,000,000 |  |
| Stocks and bonds | 700,000 |  |
| Residence | 800,000 |  |
| Interest in partnership. | 350,000 |  |
| Personal property | 25,000 |  |
| Life insurance | 200,000 |  |
| Total gross estate. |  | \$18,075,000 |
| Less |  |  |
| Claims against the estate |  |  |
| Mortgage |  | $(80,000)$ |
| Marital deduction |  |  |
| Stocks and bonds transferred to wife. |  | $(700,000)$ |
| Charitable deduction |  |  |
| Cash to State University |  | $(50,000)$ |
| Taxable estate |  | $\underline{\underline{\$ 17,245,000}}$ |
| Adjusted taxable gifts (taxable gifts made after 1976) |  |  |
| Gift to daughter (split gifts: $\$ 30,000 \times 1 / 2=$ \$15,000) - \$10,000 (1995) |  | 5,000 |
| Total taxable transfers. |  | \$17,250,000 |
| Tentative tax on total transfers |  |  |
| $\begin{aligned} & \$ 345,800+\$ 6,500,000[40 \%(\$ 17,250,000- \\ & \$ 1,000,000=\$ 16,250,000)] \ldots . . . . . \end{aligned}$ |  | \$ 6,845,800 |
| Unified credit (in 2020). |  | $(4,577,800)$ |
| Estate tax liability |  | \$ 2,268,000 |

The insurance proceeds are included in the gross estate at their value at death because the taxpayer retained the incidents of ownership (e.g., ability to designate the beneficiary).

Only the taxable portion of the gift to the daughter is added back to determine total taxable transfers. It is added at its value as determined when originally made-not at the date of death value. The rule requiring the addition of transfers made within three years of death to the gross estate generally has been repealed except for life insurance and certain retained interests as provided for in $\S 2035$.

Part of the gift is added to total taxable transfers in determining the tax. However, the whole unified credit is used against the tax. (See pp. 1-16 through 1-21 and the examples and exhibits contained therein.)
1-29 Answers to this question may differ depending on the particular law of the state you use. (See p. 1-21.)
a. False. Even though there is no Federal unified transfer tax due and owing, there may be a state inheritance tax or state estate tax applicable on the transfer. Typically this is the case in those states that have inheritance or estate taxes. About 20 states have some type of death tax.
b. False. Generally the state inheritance tax will vary depending upon who the beneficiary is. Hence it is generally not true that the state inheritance tax is the same regardless of whom he or she names as a beneficiary.
c. False. State law probably provides a complete exemption only to spousal transfers. The federal estate and gift taxes provide no special exemption for transfers to children.
d. True. Through the use of the state estate tax credit, any inheritance tax paid by Bob's estate may be used to reduce any Federal estate tax his estate owes. State inheritance taxes are not deductions from the gross estate.
1-30 a. FICA taxes were withheld by both employers on a total of $\$ 140,000$ of wages $(\$ 90,000+\$ 50,000)$. However, for 2020, the wage base for Social Security is limited to $\$ 137,700$. Consequently, the taxpayer is entitled to a credit for the excess computed as follows.
FICA taxes paid on first salary of $\$ 90,000=\$ 90,000 \times$
7.65\% . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
\$ 6,885.00
FICA wages paid on second salary of $\$ 50,000=$
$\$ 50,000 \times 7.65 \%$
Total FICA taxes withheld
$3,825.00$
$\$ 10,710.00$
Less amount owed by E :
Social Security portion of tax limited
to total wages of $\$ 137,700 \times 6.2 \%=$. . . . . . . . . . . . $\quad \$ 8,537.40$
MHI portion of tax on all wages $\$ 140,000 \times 1.45 \%=. \quad \underline{2,030.00}$
= Total FICA due from E
$\$(10,567.40)$
$\$ \quad 142.60$
(See Example 24 and pp. 1-22 through 1-25.)
b. In this case, excess FICA taxes have been paid since the total wages received by E exceed the $\$ 137,700$ cap on wages subject to the social security tax in 2020. If excess FICA taxes are paid, the amount of E refund or credit for the excess FICA taxes would not be affected by whether he was a full-time employee of each employer for different periods of the year or a full-time employee of X and a part-time employee of Y for the entire year. The key factors are (1) the amount of wages received for the year that are subject to the social security portion of the FICA tax (a maximum of $\$ 137,700$ in 2020) and (2) the amount subject to the MHI portion (all wages). (See pp. 1-22 through 1-25.)

1-31 For 2020, the social security portion of the self-employment tax rate is 12.4 percent, and the MHI portion is 2.9 percent for a total SE tax of 15.3 percent. The total rate is 15.3 percent. This reflects the fact that a self-employed person is both the "employer" and the "employee." Consequently, just like an employer is entitled to deduct its $7.65 \%$ cost, a self-employed person is entitled to do the same. Selfemployed taxpayers are allowed (1) to reduce net earnings from self-employment by one-half the combined $15.3 \%$ tax rate in arriving at the amount subject to the SE tax so only $92.35 \%$ of SE income is subject to the SE tax. In addition, the self-employed individual is entitled to an income tax deduction for one-half the amount of self-employment taxes actually paid. However, as illustrated in Example 25 on p. 1-26 of the text, not all taxpayers benefit.

In this case, H's maximum earnings base subject to each component of the self-employment tax is reduced by the wages earned as an employee. Thus, H's self-employment tax is computed as follows:

| Maximum tax base (2020). | \$137,700.00 |
| :---: | :---: |
| Less: Wages subject to FICA tax | (98,000.00) |
| Reduced maximum tax base for SE tax | \$ 39,700.00 |
| Net earnings from self-employment. | \$ 50,000.00 |
| Subtract: 7.65\% net earnings from self-employment. | $(3,825.00)$ |
| Equals 92.35\% of self-employment income. | \$46,175.00 |
| Smaller of reduced maximum tax base or amount determined above | \$ 39,700.00 |
| Times: Social Security tax rate | + 12.4\% |
| Tax on Social Security component. | \$ 4,922.80 |
| Social Security tax | \$ 4,922.80 |
| Plus: MHI tax (\$46,175 $\times 2.9 \%$ ) | 1,339.08 |
| Equals: T's self-employment tax | \$ 6,261.88 |

T will also have an income tax deduction of $\$ 3,130.94$ (one-half of the $\$ 6,261.88$ self-employment taxes paid). (See Example 26 and p. 1-27.)
1-32 Matt and Jennifer are married. They earned wages of $\$ 130,000$ and $\$ 140,000$, respectively. Neither would have the additional Medicare tax withheld by their employers since their wages did not exceed the $\$ 200,000$ threshold. Even though their combined wages of $\$ 270,000$ exceed the $\$ 250,000$ mark for joint filers, neither the separate wages of Matt nor the separate wages of Jennifer exceeded the \$200,000 threshold. Nevertheless, they would still owe $\$ 180[.9 \% \times(\$ 270,000-\$ 250,000=$ $\$ 20,000$ )] in Medicare taxes when they file their Form 1040 for 2020. (See p. 1-23.)
1-33 a. Self-employment tax computation

| Social Security (12.4\% portion) |  |  |
| :---: | :---: | :---: |
| Net earnings from self-employment. | \$270,000 |  |
| ( $1 / 2 \times 15.3 \%=7.65 \%$ ) of net earnings | $(20,655)$ |  |
| SE tax base (92.35\% of net earnings) | 249,345 |  |
| Smaller of SE tax base above or maximum wage base ( $\$ 137,700$ for 2020) | 137,700 |  |
| $\times 12.4 \%$ | $\begin{array}{r} \\ \times \quad 12.4 \% \\ \hline\end{array}$ |  |
| Social Security tax |  | \$17,075 |
| Medicare (2.9\% portion) |  |  |
| Net earnings from self-employment. | 270,000 |  |
| $(1 / 2 \times 15.3 \%=7.65 \%)$ of net earnings | $(20,655)$ |  |
| SE tax base (92.35\% net earnings)* | 249,345 |  |
| Medicare rate | $\begin{array}{r} \\ \times \quad 2.9 \% \\ \hline\end{array}$ |  |
| Medicare (2.9\% tax) |  | \$ 7,231 |
| Total self-employment tax |  | \$24,306 |
| Deduct $1 / 2$ self-employment tax |  | $1 / 2$ $\times \quad$ |
| Deduction for SE tax for AGI |  | \$12,153 |
| Additional Medicare tax (Form 8959) |  |  |
| SE tax base (92.35\% net earnings) | \$249,345 |  |
| Nontaxable threshold | $\underline{(200,000)}$ |  |
| Amount subject to Additional Medicare tax**. |  | \$49,345 |
| Additional Medicare tax rate |  | + 0.9\% |
| Additional Medicare tax. |  | \$ 444 |

* Note that both the SE tax and the Additional Medicare tax use $92.35 \% \times$ net earnings from self-employment.
** Note there is no deduction for the Additional Medicare tax.
b. In this case, Al has $\$ 90,000$ of wages and SE income of $\$ 120,000$. His SE income potentially subject to the $12.4 \%$ Social Security tax and $2.9 \%$ Medicare tax is $\$ 110,820(\$ 120,000 \times 92.35 \%)$. Al's maximum base for Social Security on his SE income is the normal base reduced by his wages or $\$ 47,700(\$ 137,700$ in $2020-\$ 90,000$ ). Thus, the maximum amounts of SE income subject to
the Social Security and Medicare taxes are: $12.4 \%$ Social Security tax component, $\$ 47,700$ and $2.9 \%$ Medicare tax component, $\$ 110,820$. For purposes of the Medicare surtax of $.9 \%$, self-employed individuals who have wages and SE income compute the amount on which they are liable by reducing the $\$ 200,000 / \$ 250,000$ threshold by any wages earned. In this case, Al would be liable for the surtax on the excess of his net earnings subject to self-employment, $\$ 110,820$, over $\$ 110,000$ ( $\$ 200,000$ threshold for singles in $2020-\$ 90,000$ wages) or $\$ 820$ ( $\$ 110,820$ self-employment income - $\$ 110,000$ revised surtax base). His self employment tax is the sum of the two components computed as follows:

| Social Security ( $12.4 \% \times \$ 47,700$ ) | \$5,915 |
| :---: | :---: |
| Medicare, ( $2.9 \% \times \$ 110,820$ ). | 3,214 |
| Total self-employment tax | \$9,129 |
| Medicare surtax (. $9 \% \times(\$ 110,820$ SE $\$ 110,000$ reduced threshold $=\$ 820$ ) |  |

Al may deduct for AGI $50 \%$ of the $12.4 \%$ and $2.9 \%$ portions (but not the $.9 \%$ surtax), a total of $\$ 4,565[50 \% \times(\$ 5,915+\$ 3,214=\$ 9,129)]$.
These computations are presented in an alternative form below.

| Maximum wage base for Social Security (2020). | \$137,700 |
| :---: | :---: |
| Less: Wages subject to FICA tax | $(90,000)$ |
| Reduced maximum tax base for self-employment tax | \$ 47,700 |
| Net earnings from self-employment. | \$120,000 |
| Subtract: $7.65 \%$ of net earnings from self-employment. | $(9,180)$ |
| SE tax base (92.35\% net earnings | \$110,820 |
| Smaller of reduced maximum tax base or amount determined above | \$ 47,700 |
| Self-employment Social Security rate | +12.4\% |
| Tax on Social Security component | \$ 5,915 |
| Social Security tax | \$ 5,915 |
| Plus: Medicare tax (\$110,820 $\times 2.9 \%$ ) | 3,214 |
| Equals: Al's self-employment tax | \$ 9,129 |
| Medicare surtax ( .9 \% (\$110,820-\$110,000 = \$820) ) | \$ 7 |

1-34 Such a move entails nontax factors, which in most cases are more important than tax considerations (e.g., promotion, additional income, chance for additional responsibility, and chance for training not available elsewhere). The tax environment of the move should be considered from both a Federal income tax perspective and a state and local tax perspective.

- Is the taxpayer able to defer any gain on the sale of his current house by the purchase of another house in the new state? Briefly touch on the basic elements of §§ 1034 and 121 . He may exclude gain on the sale of up to $\$ 250,000$ (\$500,000 for married couples). (See Chapter 15.)
- Is the taxpayer completely compensated in case he must sell his current dwelling at a loss? Note that the Internal Revenue Code does not provide authorization for a deductible loss in the case of an economic loss on the sale of a domestic dwelling.
- Are the taxpayer's moving expenses covered by his employer? If not, they are not deductible so the taxpayer would want a moving allowance that is grossed up for the related tax.
- Does the employer have a cost of living adjustment that will make the taxpayer whole in case the new state has additional taxes that the old state did not have?
- The taxes that the taxpayer should look at in the new state include the state income tax, local income tax, and such local taxes as real property taxes, sales taxes, and personal property taxes.
- All other things being equal, you should make certain that the taxpayer is advised of the real impact on his life of a $20 \%$ increase in salary. For example, if the taxpayer is in the $24 \%$ bracket, then this increase will be an effective raise of between 14 and $15 \%(20 \% \times(1-24 \%=76 \%)=15.2 \%)$ in compensation.

This raise will be even less if the new state has an income tax. Many taxpayers evaluate an offer without taking into consideration the impact of taxes. All too often, they find that what they initially believed to be a sufficient increase to justify the move is insufficient after taxes. Ultimately the taxpayer himself must determine whether the gains entailed in the move outweigh the additional tax and nontax disadvantages.
1-35 Global Corporation can use a transfer pricing scheme to shift a substantial portion of its income into Bermuda where it would not have to pay any tax. Such plans are successful because the prices on the transfers or sales between the related corporations are artificially set and rather than being negotiated at arm's length. Using the information given, the cost of the item to produce is $\$ 10$ and the sales price is $\$ 90$. Consequently, there is $\$ 80(\$ 90-\$ 10)$ of income that corporations will recognize. Global could shift the income to the countries of choice based on the prices at which the items will be transferred between the affiliated corporations. For example,

1. The Irish subsidiary could sell the clothing that cost $\$ 10$ to manufacture to the Bermuda subsidiary at an artificially low price of \$30, resulting in \$20 (\$30 $\$ 10$ ) of income taxed in Ireland at a rate of 12.5 percent.
2. The Bermuda subsidiary could then sell the clothing to the U.S. subsidiary at $\$ 80$, resulting in income of $\$ 50$ ( $\$ 80-\$ 30$ the price it paid the Irish subsidiary) which is not taxed at all.
3. The U.S. subsidiary would finally sell the clothing in the U.S. for $\$ 90$, resulting in income of only $\$ 10(\$ 90-\$ 80$ the price it paid the Bermuda subsidiary) and pay taxes at a rate of 35 percent.

These sales are summarized below:

|  | Cost of Goods <br> Sold |  |  | Sales Price | Gross Profit |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  | Tax Rate(\%) |  |  |  |  |

Through the transfer pricing arrangements, the Bermuda subsidiary, which is located in a so-called tax haven due to its low corporate tax rates, recognizes most of the profits and pays no taxes. In contrast, the U.S. subsidiary has an artificially low income and an artificially low tax bill.

Opponents of transfer pricing arrangements such as these point out that they do nothing more than save taxes. They do not necessarily result in more efficient or cost effective production and distribution. Countries typically address abusive transfer pricing by applying the arm's length principle; that is, the transfer price should be the price at which the item would change hands between unrelated parties. Unfortunately, this principle is difficult to apply, particularly in those situations where there are no market comparisons (e.g., a unique part). Instead, many countries try to address the problem through combined reporting of unitary businesses and formulary apportionment. An example of a unitary business would be a vertically integrated business that controls each item of the income producing process such as Global (e.g., manufacturing, distribution, marketing, and research). Apple Inc. is a good example of a highly integrated company since it controls all of these functions. Under the unitary approach, the income of all of the corporations which are involved in the unitary business is combined and then apportioned to a particular jurisdiction based on some factor, such as third party sales. If this approach was used in the example above, all of the income would be allocated to the U.S. since the only third party sales were made in the U.S.

