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Chapter 1
An Introduction to Tax

SOLUTIONS MANUAL

Discussion Questions

(1) [LO 1] Jessica's friend Zachary once stated that he couldn't understand why someone would take a tax course. Why is this a rather naïve view?

Taxes are a part of everyday life and have a financial effect on many of the major personal decisions that individuals face (e.g., investment decisions, evaluating alternative job offers, saving for education expenses, gift or estate planning, etc.).

(2) [LO 1] What are some aspects of business that require knowledge of taxation? What are some aspects of personal finance that require knowledge of taxation?

Taxes play an important role in fundamental business decisions such as the following:

- **What organizational form should a business use?**
- **Where should the business locate?**
- **How should business acquisitions be structured?**
- **How should the business compensate employees?**
- **What is the appropriate mix of debt and equity for the business?**
- **Should the business rent or own its equipment and property?**
- **How should the business distribute profits to its owners?**

One must consider all transaction costs (including taxes) to evaluate the merits of a transaction.

Common personal financial decisions that taxes influence include: choosing investments, retirement planning, choosing to rent or buy a home, evaluating alternative job offers, saving for education expenses, and doing gift or estate planning.

(3) [LO 1] Describe some ways in which taxes affect the political process in the United States.

U.S. presidential candidates often distinguish themselves from their opponents based upon their tax rhetoric. Likewise, the major political parties generally have very diverse views of the appropriate way to tax the public. Determining who is taxed, what is taxed, and how much is taxed are difficult questions. Voters must have a basic understanding of taxes to

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evaluate the merits of alternative tax proposals offered by opposing political candidates and their political parties.

(4) [LO 2] Courtney recently received a speeding ticket on her way to the university. Her fine was $200. Is this considered a tax? Why or why not?

The $200 speeding ticket is not considered a tax. Instead, it is considered a fine or penalty. Taxes differ from fines and penalties because taxes are not intended to punish or prevent illegal behavior.

(5) [LO 2] Marlon and Latoya recently started building a house. They had to pay $300 to the county government for a building permit. Is the $300 payment a tax? Why or why not?

The building permit is not considered a tax because $300 payment is directly linked to a benefit that they received (i.e., the ability to build a house).

(6) [LO 2] To help pay for the city's new stadium, the city of Birmingham recently enacted a 1 percent surcharge on hotel rooms. Is this a tax? Why or why not?

The 1 percent surcharge is a tax. The 1 percent surcharge is an earmarked tax – i.e., collected for a specific purpose. The surcharge is considered a tax because the tax payments made by taxpayers do not directly relate to the specific benefit received by the taxpayers.

(7) [LO 2] As noted in Example 1-2, tolls, parking meter fees, and annual licensing fees are not considered taxes. Can you identify other fees that are similar?

There are several possible answers to this question. Some common examples include entrance fees to national parks, tag fees paid to local/state government for automobiles, boats, etc.

(8) [LO 2] If the general objective of our tax system is to raise revenue, why does the income tax allow deductions for charitable contributions and retirement plan contributions?

In addition to the general objective of raising revenue, Congress uses the federal tax system to encourage certain behavior and discourage other behavior. The charitable contribution deduction is intended to encourage taxpayers to support the initiatives of charitable organizations, whereas deductions for retirement contributions are intended to encourage retirement savings. Another objective of the tax system is to redistribute wealth.

(9) [LO 2] One common argument for imposing so-called sin taxes is the social goal of *reducing* demand for such products. Using cigarettes as an example, is there a

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segment of the population that might be sensitive to price and for whom high taxes might discourage purchases?

The most obvious segment sensitive to price may be teenagers and younger adults that typically have less disposable income, although price sensitivity or elasticity will vary by taxpayer.

(10) [LO 3] Dontae stated that he didn't want to earn any more money because it would "put him in a higher tax bracket." What is wrong with Dontae's reasoning?

Although earning additional taxable income may increase Dontae's marginal tax rate (i.e., put him in a higher tax bracket), the additional income earned does not affect the taxes that Dontae will pay on his existing income. Moving to a higher tax bracket simply means that Dontae will pay a higher tax rate on the additional income earned (not income that he already has).

(11) [LO 3] Describe the three different tax rates discussed in the chapter and how taxpayers might use them.

The marginal tax rate is the tax rate that applies to the taxpayer's additional taxable income or deductions that the taxpayer is evaluating in a decision. Specifically,

$$\textbf{Marginal Tax Rate} = \frac{\Delta Tax}{\Delta TaxableIncome} = \frac{(NewTotalTax - OldTotalTax)}{(NewTaxableIncome - OldTaxableIncome)}$$

The marginal tax rate is particularly useful in tax planning because it represents the rate of taxation or savings that would apply to additional taxable income or tax deductions.

The average tax rate represents the taxpayer's average level of taxation on each dollar of taxable income. Specifically,

$$\textbf{Average Tax Rate} = \frac{Total\ Tax}{Taxable\ Income}$$

The average tax rate is often used in budgeting tax expense as a portion of income (i.e., what percent of taxable income earned is paid in tax).

The effective tax rate represents the taxpayer's average rate of taxation on each dollar of total income (i.e., taxable *and* nontaxable income). Specifically,

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Effective Tax Rate = $\frac{TotalTax}{TotalIncome}$

The effective tax rate provides a depiction of a taxpayer's tax burden because it depicts the taxpayer's total tax paid as a ratio of the sum of both taxable and nontaxable income earned.

(12) [LO 3] Which is a more appropriate tax rate to use to compare taxpayers' tax burdens – the average or the effective tax rate? Why?

Relative to the average tax rate, the effective tax rate provides a better depiction of a taxpayer's tax burden because it depicts the taxpayer's total tax paid as a ratio of the sum of both taxable and nontaxable income earned.

(13) [LO 3] Describe the differences between a proportional, progressive, and regressive tax rate structures.

A proportional (flat) tax rate structure imposes a constant tax rate throughout the tax base. In other words, as the tax base increases, the taxes paid increases, but the marginal tax rate remains constant. Because the marginal tax rate is constant across all levels of the tax base, the average tax rate remains constant across the tax base and always equals the marginal tax rate. Common examples of proportional taxes include sales taxes and excise taxes (i.e., taxes based on quantity such as gallons of gas purchased).

A progressive tax rate structure imposes an increasing marginal tax rate as the tax base increases. In other words, as the tax base increases, both the marginal tax rate and the taxes paid increase. Common examples of progressive tax rate structures include federal and most state income taxes and federal estate and gift taxes.

A regressive tax rate structure imposes a decreasing marginal tax rate as the tax base increases. In other words, as the tax base increases, the taxes paid increases, but the marginal tax rate decreases. Regressive tax rate structures are not common. In the United States, the Social Security tax and the federal employment tax employ a regressive tax rate structure. However, there are other regressive taxes when the tax is viewed in terms of effective tax rates. For example, a sales tax by definition is a proportional tax – i.e., as taxable purchases increase, the sales tax rate (i.e., the marginal tax rate) remains constant.

(14) [LO 3] Arnold and Lilly recently had a discussion about whether a sales tax is a proportional tax or a regressive tax. Arnold argued that a sales tax is regressive. Lilly countered that the sales tax is a flat tax. Who was correct?

Arnold and Lilly were both correct. A sales tax by definition is a proportional tax – i.e., as taxable purchases increase, the sales tax rate (i.e.,

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the marginal tax rate) remains constant. For this reason, Arnold was correct. Nonetheless, when you consider that the proportion of one's total income spent on taxable purchases likely decreases as total income increases, the sales tax may be considered a regressive tax. A good example of this is food, although higher-income taxpayers may pay more for food than lower-income taxpayers, higher-income taxpayers spend a smaller percentage of their income on food—this is why many states exempt food from the sales tax base—because of its regressive nature. For this reason, Lilly was correct.

(15) [LO 4] Which is the largest tax collected by the U.S. government? What types of taxpayers are subject to this tax?

The federal income tax is the largest tax collected by the U.S. government. Currently, federal income taxes are levied on individuals, corporations, estates, and trusts.

(16) [LO 4] What is the tax base for the Social Security and Medicare taxes for an employee or employer? What is the tax base for Social Security and Medicare taxes for a self-employed individual? Is the self-employment tax in addition to or in lieu of federal income tax?

Employee wages is the tax base for the Social Security and Medicare taxes. Net earnings from self-employment is the tax base for the self-employment tax. The self-employment tax is in addition to the federal income tax. The same is true for employment taxes—they are in addition to the federal income tax.

(17) [LO 4] What are unemployment taxes?

Employers are required to pay federal and state unemployment taxes, which fund temporary unemployment benefits for individuals terminated from their jobs without cause. The tax base for the unemployment taxes is wages or salary.

(18) [LO 4] What is the distinguishing feature of an excise tax?

Excise taxes differ from other taxes in that the tax base on excise taxes is typically based on the quantity of an item or service purchased. The federal government imposes a number of excise taxes on goods such as alcohol, diesel fuel, gasoline, tobacco products and services such as telephone services. In addition, states also often impose excise taxes on these same items.

(19) [LO 4] What are some of the taxes that currently are unique to state and local governments? What are some of the taxes that the federal, state, and local governments each utilize?

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The sales, use, and property (personal, real, intangible) taxes are unique to state and local governments. Taxes that are common among the federal, state, and local governments include income taxes, excise taxes, and estate and gift taxes.

(20) [LO 4] The state of Georgia recently increased its tax on a pack of cigarettes by $2. What type of tax is this? Why might Georgia choose this type of tax?

The cigarette tax is both considered an excise tax (i.e., a tax based on quantity purchased) and a "sin" tax (i.e., a tax on goods that are deemed to be socially undesirable). Georgia may choose this type of tax to discourage smoking and because sin taxes are often viewed as acceptable ways of increasing tax revenues.

(21) [LO 4] What is the difference between a sales tax and a use tax?

The tax base for sales taxes is retail sales of goods (and some services). The tax base for the use tax is the retail price of goods owned, possessed or consumed within a state that were not purchased within the state (e.g., goods purchased over the internet). The prevalence of the use tax has significantly declined since economic nexus for sales taxes were found to be constitutional (see Chapter 23 for a discussion of sales and use taxes).

(22) [LO 4] What is an ad valorem tax? Name an example of this type of tax.

An ad valorem tax is a tax based on the fair market value of property. Real and personal property taxes are examples of ad valorem taxes.

(23) [LO 4] What are the differences between an explicit and an implicit tax?

An explicit tax is a tax that is directly imposed by a government unit and easily quantified. Implicit taxes are the reduced rates of pretax return that a tax-favored asset produces (e.g., the lower pretax rate of return earned by tax exempt municipal bonds). Although implicit taxes are real and equally important in understanding our tax system, they are difficult to quantify.

(24) [LO 4] When we calculate average and effective tax rates, do we consider implicit taxes? What effect does this have on taxpayers' perception of equity?

Implicit taxes are very difficult to quantify and thus, are generally not considered when calculating average and effective tax rates. Since implicit taxes are ignored in these calculations, taxpayers may conclude that groups of taxpayers investing in tax advantaged assets (subject to implicit tax) do not pay their fair share of tax as represented by a low effective tax rate.

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(25) [LO 4] Benjamin recently bought a truck in Alabama for his business in Georgia. What different types of federal and state taxes may affect this transaction?

Benjamin will have to pay state sales tax in Alabama for the truck purchased. However, some states only charge sales tax when the purchased vehicle is registered. Assuming Alabama sales tax was charged, when the vehicle is registered in Georgia, Benjamin will have to pay use tax on the purchase at a rate representing any difference in the Alabama sales tax rate and the Georgia use tax rate. Benjamin will also have to pay personal property tax annually on the truck. Finally, since the vehicle is used in Benjamin's business, he will be able to depreciate the truck for federal income tax purposes.

(26) [LO 5] Kobe strongly dislikes SUVs and is appalled that so many are on the road. He proposes to eliminate the federal income tax and replace it with a $50,000 annual tax per SUV. Based on the number of SUVs currently owned in the United States, he estimates the tax will generate exactly the amount of tax revenue currently collected from the income tax. What is wrong with Kobe's proposal? What type of forecasting is Kobe likely using?

Kobe's forecast is based on static forecasting (i.e., he is ignoring how taxpayers may alter their activities in response to the tax law change). Given that taxpayers are likely to substitute purchases of other vehicles for SUVs (i.e., the substitution effect), Kobe's proposal is likely to result in a large discrepancy in projected and actual tax revenues since taxpayers will likely purchase less SUVs that are subject to the tax.

(27) [LO 5] What is the difference between the income and substitution effects? For which types of taxpayers is the income effect more likely descriptive? For which types of taxpayers is the substitution effect more likely descriptive?

The income effect predicts that when taxpayers are taxed more (e.g., tax rate increases from 22 to 24 percent), they will work harder to generate the same after-tax dollars. The substitution effect predicts that when taxpayers are taxed more, they will substitute nontaxable activities (e.g., leisure activities) for taxable activities because the marginal value of taxable activities has decreased. The income effect is likely to be more descriptive for taxpayers with insufficient income to meet their necessities, etc. for their desired standard of living. The substitution effect is likely to be more descriptive for taxpayers with sufficient income to meet their necessities and to sustain their desired standard of living.

(28) [LO 5] What is the difference between horizontal and vertical equity? How do tax preferences affect people's view of horizontal equity?

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Horizontal equity means that two taxpayers in similar situations pay the same tax. Vertical equity is achieved when taxpayers with greater ability to pay tax, pay more tax relative to taxpayers with a lesser ability to pay tax. One can view vertical equity in terms of tax dollars paid or in terms of tax rates.

Governmental units provide tax preferences for a variety of reasons – e.g., encourage investment, social objectives, etc. For example, a deduction to mortgage interest paid which encourages home ownership. Whether one views these tax preferences as appropriate or not, they greatly influence whether one considers a tax system to be fair in general and specifically, horizontally equitable. Specifically, if one views a tax preference as being inappropriate, this would adversely affect one's view of horizontal equity.

(29) [LO 3, LO 5] Montel argues that a flat income tax rate system is vertically equitable. Oprah argues that a progressive tax rate structure is vertically equitable. How do their arguments differ? Who is correct?

Vertical equity is achieved when taxpayers with greater ability to pay tax, pay more tax relative to taxpayers with a lesser ability to pay tax. One can view vertical equity in terms of tax dollars paid or in terms of tax rates. Proponents of a flat income tax or sales tax (i.e., proportional tax rate structures) are more likely to argue that vertical equity is achieved when taxpayers with a greater ability to pay tax, pay more in tax dollars. Proponents of a progressive tax system are more likely to argue that taxpayers with a greater ability to pay should be subject to a higher tax rate. This view is based upon the argument that the relative burden of a flat tax rate decreases as a taxpayer's income (e.g., disposable income) increases. Which is the correct answer? There is no correct answer. Nonetheless, many feel very strongly regarding one view or the other.

(30) [LO 3, LO 5] Discuss why evaluating vertical equity simply based on tax rate structure may be less than optimal.

Although tax rate structures can be used, in part, to assess vertical equity, focusing on the tax rate structure solely ignores the role that the tax base plays in determining vertical equity. Indeed, focusing on the tax rate structure in evaluating a tax system is appropriate only if the tax base chosen (e.g., taxable income, purchases, property owned, etc.) accurately portrays a taxpayer's ability to pay. This can be a rather strong assumption. Consider the sales tax. Although taxable purchases typically increase as taxpayers' total incomes increase, total incomes typically increase at a much faster rate than taxable purchases. Thus, the gap between taxable purchases and total income widens as total income increases. The end result is that the effective tax rates for those with a greater ability to pay are lower than those taxpayers with a lesser ability to pay. Regressive tax rate structures are

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generally considered not to satisfy vertical equity (unless one is a strong advocate of the belief that those with a greater ability to pay simply should be paying a higher tax, albeit at a lower rate). In sum, evaluating vertical equity in terms of effective tax rates may be much more informative than simply an evaluation of tax rate structures.

(31) [LO 4, LO 5] Compare the federal income tax to sales taxes using the "certainty" criterion.

Certainty means that taxpayers should be able to determine when to pay the tax, where to pay the tax, and how to determine the tax. It is relatively easy to determine when and where to pay the federal income tax and sales taxes. For example, individual federal income tax returns and the remaining balance of taxes owed must be filed with the Internal Revenue Service each year on or before April 15th (or the first business day following April 15th if the 15th falls on a weekend). Likewise, sales taxes are paid to retailers when items are purchased, and property taxes are typically paid annually to local governments. The ease of "how to determine the tax," however, varies by tax system. Sales taxes are determined with relative ease – i.e., they are based on the value of taxable purchases. In contrast, income taxes are often criticized as being complex. What are taxable/nontaxable forms of income? What are deductible/nondeductible expenses? When should income or expense be reported? For many taxpayers (e.g., wage earners with few investments), the answers to these questions are straightforward. For other taxpayers (e.g., business owners, individuals with a lot of investments), the answers to these questions are nontrivial. Constant tax law changes enacted by Congress also add to the difficulty in determining the proper amount of income tax to pay. These changes can make it difficult to determine a taxpayer's current tax liability much less plan for the future.

(32) [LO 5] Many years ago a famous member of Congress proposed eliminating federal income tax withholding. What criterion for evaluating tax systems did this proposal violate? What would likely have been the result of eliminating withholding?

Eliminating withholding would violate the convenience criterion – i.e., a tax system should be designed to facilitate the collection of tax revenues without undue hardship on the taxpayer or the government (i.e., a tax system should make collection as easy as possible). Eliminating withholding would most likely have slowed collection of taxes and increased taxpayer aggressiveness (or tax evasion). Prior research suggests that taxpayers are more likely to take more aggressive tax positions when they owe additional taxes when filing their return.

(33) [LO 5] "The federal income tax scores very high on the economy criterion because the current IRS budget is relatively low compared to the costs of a typical

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collection agency." Explain why this statement may be considered wrong.

This statement ignores the economy criterion from the taxpayer's perspective. The income tax is often criticized for the compliance costs imposed on the taxpayer. Indeed, for certain taxpayers, record-keeping costs, accountant fees, attorney fees, etc., can be quite substantial. Advocates of alternative tax systems often challenge the income tax on this criterion.

Problems

(34) [LO 3] Chuck, a single taxpayer, earns $75,000 in taxable income and $10,000 in interest from an investment in City of Heflin bonds. Using the U.S. tax rate schedule (see Appendix C), how much federal tax will he owe? What is his average tax rate? What is his effective tax rate? What is his current marginal tax rate?

Chuck will owe $11,553 in federal income tax this year computed as follows: $11,553 = $5,426 + 22% ($75,000 - $47,150)—rounded up to the nearest dollar.

Chuck's average tax rate is 15.40 percent.

Average Tax Rate = Total Tax/Taxable Income = $11,553/$75,000 **= 15.40%**

Chuck's effective tax rate is 13.59 percent.

Effective tax rate = Total Tax/Total Income = $11,553/($75,000 + $10,000) **= 13.59%**

Chuck is currently in the 22 percent tax rate bracket. His marginal tax rate on increases in income up to $25,525 and deductions from income up to $27,850 is 22 percent.

(35) [LO 3] Using the facts in problem 34, if Chuck earns an additional $40,000 of taxable income, what is his marginal tax rate on this income? What is his marginal rate if, instead, he had $40,000 of additional deductions?

If Chuck earns an additional $40,000 of taxable income, his marginal tax rate on the income is 22.72 percent.

Marginal Tax Rate = Change in Tax/Change in Taxable Income = ($20,642.50 - $11,553)/($115,000 - $75,000) **= 22.72%**

Where $20,642.50 for the revised tax is computed as follows: $20,642.50 = $17,168.50 + 24% ($115,000 - $100,525).

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If Chuck instead had $40,000 of additional tax deductions, his marginal tax rate on the deductions would be 18.96 percent.

Marginal Tax Rate = Change in Tax/Change in Taxable Income = ($3,968 - $11,553)/($35,000 - $75,000) **= 18.96%**

Where $3,968 for the revised tax is computed as follows: $3,968 = $1,160 + 12% (35,000 - $11,600).

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(36) [LO 3] Campbell, a single taxpayer, earns $400,000 in taxable income and $2,000 in interest from an investment in State of New York bonds. Using the U.S. tax rate schedule (see Appendix C), how much federal tax will she owe? What is her average tax rate? What is her effective tax rate? What is her current marginal tax rate?

Campbell will owe $110,374.75 in federal income tax this year computed as follows:

$110,374.75 = $55,678.50 + 35% × ($400,000 - $243,725)—rounded up to the nearest dollar.

Campbell's average tax rate is 27.59 percent.

Average Tax Rate = Total Tax/Taxable Income = $110,374.75/$400,000 = **27.59%**

Campbell's effective tax rate is 27.46 percent.

Effective tax rate = Total Tax/Total Income = $110,374.75/($400,000 + $2,000) **= 27.46%**

Campbell is currently in the 35 percent tax rate bracket. Her marginal tax rate on deductions up to $156,275 will be 35 percent. However, her marginal tax rate on the next $209,350 of income will be 35%, and income earned over $609,350 will be taxed at 37 percent.

(37) [LO 3] Using the facts in problem 36, if Campbell earns an additional $15,000 of taxable income, what is her marginal tax rate on this income? What is her marginal rate if, instead, she had $15,000 of additional deductions?

If Campbell earns an additional $15,000 of taxable income, her marginal tax rate on the income is 35 percent.

Marginal Tax Rate = Change in Tax/Change in Taxable Income = ($115,624.75 - $110,374.50)/($415,000 - $400,000) **= 35.00%**

Where $115,624.75 for the revised tax is computed as follows: $115,624.75 = $55,678.50 + 35% ($415,000 - $243,725).

If Campbell instead had $15,000 of additional tax deductions, her marginal tax rate on the deductions would be 35.00 percent.

Marginal Tax Rate = Change in Tax/Change in Taxable Income = ($105,124.75 - $110,374.75)/($385,000 - $400,000) **= 35.00%**

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Where $105,124.75 for the revised tax is computed as follows: $105,124.75 = $55,678.50 + 35% ($385,000 - $243,725).

(38) [LO 3] Jorge and Anita, married taxpayers, earn $150,000 in taxable income and $40,000 in interest from an investment in City of Heflin bonds. Using the U.S. tax rate schedule for married filing jointly (see Example 1-3), how much federal tax will they owe? What is their average tax rate? What is their effective tax rate? What is their current marginal tax rate?

Jorge and Anita will owe $23,106 in federal income tax this year computed as follows:

$23,106 = $10,852 + 22% ($150,000 - $94,300).

Jorge and Anita's average tax rate is 15.40 percent.

Average Tax Rate = Total Tax/Taxable Income = $23,106/$150,000 **= 15.40%**

Jorge and Anita's effective tax rate is 12.16 percent.

Effective tax rate = Total Tax/Total Income = $23,106/($150,000 + $40,000) **= 12.16%**

Jorge and Anita are currently in the 22 percent tax rate bracket. Their marginal tax rate on increases of income up to $51,050 and deductions up to $55,700 is 22 percent.

(39) [LO 3] Using the facts in problem 38, if Jorge and Anita earn an additional $100,000 of taxable income, what is their marginal tax rate on this income? What is their marginal rate if, instead, they reported an additional $100,000 in deductions?

If Jorge and Anita earn an additional $100,000 of taxable income, their marginal tax rate on the income is 22.98 percent.

Marginal Tax Rate = Change in Tax/Change in Taxable Income = ($46,085 - $23,106)/($250,000 - $150,000) **= 22.98%**

Where $46,085 for the revised tax is computed as follows: $46,085 = $34,337 + 24% ($250,000 - $201,050).

If Jorge and Anita instead had $100,000 of additional tax deductions, their marginal tax rate on the deductions would be 17.57 percent.

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Marginal Tax Rate = Change in Tax/Change in Taxable Income = ($5,536 - $23,106)/($50,000 - $150,000) **= 17.57%**

Where $5,536 for the revised tax is computed as follows: $5,536 = $2,320 + 12% ($50,000 - $23,200).

(40) [LO 3] Scot and Vidia, married taxpayers, earn $240,000 in taxable income and $5,000 in interest from an investment in City of Tampa bonds. Using the U.S. tax rate schedule for married filing jointly (see Example 1-3), how much federal tax will they owe? What is their average tax rate? What is their effective tax rate? What is their current marginal tax rate?

Scot and Vidia will owe $43,685 in federal income tax this year computed as follows:

$43,685 = $34,337 + 24% ($240,000 - $201,050).

Scot and Vidia's average tax rate is 18.20 percent.

Average Tax Rate = Total Tax/Taxable Income = $43,685/$240,000 **= 18.20%**

Scot and Vidia's effective tax rate is 17.83 percent.

Effective tax rate = Total Tax/Total Income = $43,685/($240,000 + $5,000) **= 17.83%**

Scot and Vidia are currently in the 24 percent tax rate bracket. Their marginal tax rate on increases in income up to $143,900 and deductions up to $38,950 is 24 percent.

(41) [LO 3] Using the facts in problem 40, if Scot and Vidia earn an additional $80,000 of taxable income, what is their marginal tax rate on this income? How would your answer differ if they, instead, had $80,000 of additional deductions?

If Scot and Vidia earn an additional $80,000 of taxable income, their marginal tax rate on the income is 24.00 percent.

Marginal Tax Rate = Change in Tax/Change in Taxable Income = ($62,885 - $43,685)/($320,000 - $240,000) **= 24.00%**

Where $62,885 for the revised tax is computed as follows: $62,885 = $34,337 + 24% ($320,000 - $201,050).

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If Scot and Vidia instead had $80,000 of additional tax deductions, their marginal tax rate on the deductions would be 22.97 percent.

Marginal Tax Rate = Change in Tax/Change in Taxable Income = ($25,306 - $43,685)/($160,000 - $240,000) **= 22.97%**

Where $25,306 for the revised tax is computed as follows: $25,306 = $10,852 + 22% ($160,000 - $94,300).

(42) [LO 3, LO 4] Melinda invests $200,000 in a City of Heflin bond that pays 6 percent interest. Alternatively, Melinda could have invested the $200,000 in a bond recently issued by Surething Inc. that pays 8 percent interest and has risk and other nontax characteristics similar to the City of Heflin bond. Assume Melinda's marginal tax rate is 25 percent.

a. What is her after-tax rate of return for the City of Heflin bond?

Since the City of Heflin bond is a tax-exempt bond, Melinda's after-tax rate of return on the bond is equal to its pretax rate of return (6 percent).

b. How much explicit tax does Melinda pay on the City of Heflin bond?

Since the City of Heflin bond is a tax-exempt bond, Melinda pays no explicit tax on the interest earned from the City of Heflin bond.

c. How much implicit tax does she pay on the City of Heflin bond?

Melinda earns $12,000 of interest on the City of Heflin bond (i.e., 6% × $200,000). A similar priced taxable bond (i.e., the Surething Inc. bond) would pay $16,000 of taxable interest (i.e., 8% × $200,000). Melinda pays $4,000 of implicit tax on the City of Heflin bond [i.e., the difference between the pretax interest earned from a similar taxable bond ($16,000) and the pretax interest earned from the City of Heflin bond ($12,000)].

d. How much explicit tax would she have paid on the Surething Inc. bond?

Since Melinda's marginal tax rate is 25 percent, she would have paid $4,000 of explicit tax (i.e., 25% × $16,000) on the interest earned from the Surething Inc. bond.

e. What is her after-tax rate of return on the Surething Inc. bond?

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Her after-tax income from the Surething Inc. bond is $12,000 ($16,000 interest income - $4,000 tax). Thus, her after-tax return from the Surething Inc. bond would be 6 percent (after-tax income of $12,000 divided by her $200,000 investment).

(43) [LO 3, LO 4 PLANNING] Hugh has the choice between investing in a City of Heflin bond at 6 percent or investing in a Surething Inc. bond at 9 percent. Assuming that both bonds have the same nontax characteristics and that Hugh has a 40 percent marginal tax rate, in which bond should he invest?

Hugh's after-tax rate of return on the tax-exempt City of Heflin bond is 6 percent. The Surething bond pays taxable interest of 9 percent. Hugh's after-tax rate of return on the Surething bond is 5.4 percent (i.e., 9% interest income – (9% × 40%) tax = 5.4%). Hugh should invest in the City of Heflin bond.

(44) [LO 3, LO 4 PLANNING] Using the facts in problem 43, what interest rate does Surething Inc. need to offer to make Hugh indifferent between investing in the two bonds?

To be indifferent between investing in the two bonds, the Surething Inc. bond should provide Hugh the same after-tax rate of return as the City of Heflin bond (6 percent). To solve for the required pretax rate of return we can use the following formula: After-tax return = Pretax return × (1 – Marginal Tax Rate).

Surething Inc. needs to offer a 10 percent interest rate to generate a 6 percent after-tax return and make Hugh indifferent between investing in the two bonds – i.e.,

6% = Pretax return × (1 – 40%);
Pretax return = 6% / (1 – 40%) = 10%

(45) [LO 3, LO 4 PLANNING] Fergie has the choice between investing in a State of New York bond at 5 percent and a Surething Inc. bond at 8 percent. Assuming that both bonds have the same nontax characteristics and that Fergie has a 30 percent marginal tax rate, in which bond should she invest?

Fergie's after tax rate of return on the tax-exempt State of New York bond is 5 percent. The Surething bond pays taxable interest of 8 percent. Fergie's after-tax rate of return on the Surething bond is 5.6 percent (i.e., 8% interest income – (8% × 30%) tax = 5.6%). Fergie should invest in the Surething bond.

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(46) [LO 3, LO 4 PLANNING] Using the facts in Problem 45, what interest rate does the State of New York bond need to offer to make Fergie indifferent between investing in the two bonds?

To be indifferent between investing in the two bonds, the State of New York bond should provide Fergie the same after-tax rate of return as the Surething bond. Fergie's after-tax rate of return on the Surething bond is 5.6 percent (i.e., 8% interest income – (8% × 30%) tax = 5.6%). The state of New York needs to offer a 5.6 percent interest rate to generate a 5.6 percent after-tax return to make Fergie indifferent between investing in the two bonds.

(47) [LO 3] Given the following tax structure, what minimum tax would need to be assessed on Shameika to make the tax progressive with respect to average tax rates?

Taxpayer	Salary	Muni-Bond Interest	Total Tax
Mihwah	**10,000**	**10,000**	**600**
Shameika	**50,000**	**30,000**	**???**

Mihwah's average tax rate is 6 percent.

$$\textbf{Average Tax Rate} = \frac{Total Tax}{Taxable Income} = \frac{\$600}{\$10{,}000} = \textbf{6\%}$$

A 6 percent average tax rate on Shameika's $50,000 taxable income would result in $3,000 of tax (i.e., 6% × $50,000 = $3,000). Thus, Shameika must pay more than $3,000 tax (e.g., $3,001) for the tax structure to be progressive with respect to average tax rates.

(48) [LO 3] Using the facts in Problem 47, what minimum tax would need to be assessed on Shameika to make the tax progressive with respect to effective tax rates?

Mihwah's effective tax rate is 3 percent.

$$\textbf{Effective tax rate} = \frac{Total Tax}{Total Income} = \frac{\$600}{(\$10{,}000 + \$10{,}000)} = \textbf{3\%}$$

A 3 percent effective tax rate on Shameika's $80,000 total income would result in $2,400 of tax (i.e., 3% × $80,000 = $2,400). Thus, Shameika must pay more than $2,400 tax (e.g., $2,401) for the tax structure to be progressive with respect to effective tax rates.

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(49) [LO 3, LO 5] Song earns $100,000 taxable income as an interior designer and is taxed at an average rate of 20 percent (i.e., $20,000 of tax). If Congress increases the income tax rate such that Song's average tax rate increases from 20 percent to 25 percent, how much more income tax will she pay assuming that the income effect is descriptive? What effect will this tax rate change have on the tax base and tax collected?

Under the current income tax, Song has $80,000 of income after tax. If the income effect is descriptive and Congress increases tax rates so that Song's average tax rate is 25 percent, Song will need to earn $106,666.67 to continue to have $80,000 of income after tax.

After-tax income = Pretax income (1 – tax rate)

$80,000 = Pretax income (1 -.25)

Pretax income = $106,666.67

Song will pay $26,666.67 in tax ($106,666.67 × .25). Accordingly, if the income effect is descriptive, the tax base and the tax collected will increase. The additional income tax is $26,666.67 − $20,000 = $6,666.67

(50) [LO 3, LO 5] Using the facts from Problem 49, what will happen to the government's tax revenues if Song chooses to spend more time pursuing her other passions besides work in response to the tax rate change and therefore earns only $75,000 in taxable income? What is the term that describes this type of reaction to a tax rate increase? What types of taxpayers are likely to respond in this manner?

If Song only earns $75,000 of taxable income, she would pay only $18,750 of tax under the new tax structure (i.e., $75,000 × .25). Thus, the government's tax revenues would decrease by $1,250 (i.e., $18,750 - $20,000). This is an example of the substitution effect, which may be descriptive for taxpayers with more disposable income.

(51) [LO 5] Given the following tax structure, what tax would need to be assessed on Venita to make the tax horizontally equitable?

Taxpayer	Salary	Total Tax
Mae	**10,000**	**600**
Pedro	**20,000**	**1,500**
Venita	**10,000**	**???**

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Horizontal equity means that two taxpayers in similar situations pay the same tax. Thus, to make the tax structure horizontally equitable, Venita should pay $600 in tax.

(52) [LO 5] Using the facts in Problem 51, what is the minimum tax that Pedro should pay to make the tax structure vertically equitable based on the tax rate paid? This would result in what type of tax rate structure?

Mae's average tax rate is 6 percent.

$$\textbf{Average Tax Rate} = \frac{Total Tax}{Taxable Income} = \frac{\$600}{\$10{,}000} = \textbf{6\%}$$

To be vertically equitable with respect to tax rates, Pedro should pay a tax rate higher than 6 percent. A 6 percent tax rate on Pedro's $20,000 taxable income would result in $1,200 of tax (i.e., 6% × $20,000 = $1,200). Thus, Pedro must pay more than $1,200 tax (e.g., $1,201) for the tax structure to be vertically equitable (i.e., to generate a tax rate more than 6 percent). This would be a progressive structure since the structure imposes an increasing marginal tax rate as the tax base increases.

(53) [LO 5] Using the facts in Problem 51, what is the minimum tax that Pedro should pay to make the tax structure vertically equitable with respect to the amount of tax paid? This would result in what type of tax rate structure?

To be vertically equitable with respect to the amount of tax paid, Pedro should pay more in tax dollars than Mae because he earns more taxable income than her. A strict interpretation of this definition would suggest that the tax is vertically equitable if Pedro pays 1 more dollar in tax than Mae (i.e., $601). However, this would result in a regressive tax structure (which most people would argue is not vertically equitable). A less strict interpretation of vertical equity (based on dollar amounts) is that Pedro should pay more tax than Mae but at the same tax rate (i.e., a proportional or flat tax rate structure).

(54) [LO 5] Consider the following tax rate structure. Is it horizontally equitable? Why or why not? Is it vertically equitable? Why or why not?

Taxpayer	Salary	Total Tax
Rajiv	10,000	600
LaMarcus	20,000	600
Dory	10,000	600

The tax rate schedule is horizontally equitable because those taxpayers in the same situation (Rajiv and Dory) pay the same tax ($600). The tax is not

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vertically equitable because the taxpayer with a greater ability to pay (LaMarcus) does not pay more tax, nor does he pay a higher tax rate.

(55) [LO 5] Consider the following tax rate structure. Is it horizontally equitable? Why or why not? Is it vertically equitable? Why or why not?

Taxpayer	Salary	Total Tax
Marilyn	**10,000**	**600**
Kobe	**20,000**	**3,000**
Alfonso	**30,000**	**6,000**

We cannot evaluate whether the tax rate structure is horizontally equitable because we are unable to determine if taxpayers in similar situations pay the same tax (i.e., the problem does not give data for two taxpayers with the same income). The tax rate structure would be considered vertically equitable because taxpayers with higher income pay more tax and at a higher rate. Specifically, Marilyn's, Kobe's, and Alfonso's average tax rates are 6 percent, 15 percent, and 20 percent, respectively.

(56) [LO 5] Consider the following tax rate structure. Is it horizontally equitable? Why or why not? Is it vertically equitable? Why or why not?

Taxpayer	Salary	Total Tax
Rodney	**10,000**	**600**
Keisha	**10,000**	**600**

The tax rate structure is horizontally equitable because taxpayers in similar situations (Rodney and Keisha) pay the same tax. We cannot evaluate whether the tax is vertically equitable because we are unable to determine if taxpayers with a greater ability to pay (higher income) pay more tax.

(57) [LO 1, LO 4 PLANNING] Lorenzo is considering starting a trucking company either in Texas or Oklahoma. He will relocate his family, which includes his wife, children, and parents, to reside in the same state as his business. What types of taxes may influence his decision of where to locate his business?

Taxes will affect several aspects of Lorenzo's decision. Lorenzo should consider differences in Texas and Oklahoma for (1) business taxes (e.g., corporate taxes), (2) individual income taxes, (3) excise taxes on gasoline, (4) real estate taxes (business and personal), (5) estate taxes (e.g., for wealth

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transfers from his parents), and (6) sales taxes.

(58) [LO 3, LO 5 PLANNING] Congress would like to increase tax revenues by 10 percent. Assume that the average taxpayer in the United States earns $65,000 and pays an average tax rate of 15 percent. If the income effect is in effect for all taxpayers, what average tax rate will result in a 10 percent increase in tax revenues? This is an example of what type of forecasting?

This analysis is an example of dynamic forecasting. Based on the information above, the average taxpayer pays $9,750 of tax (i.e., $65,000 × 15%), leaving $55,250 of income after tax. A 10 percent increase in revenues would mean that the average taxpayer pays $10,725 in tax ($9,750 × 1.10). With this new tax amount, we can solve for the tax rate that would generate this tax amount.

After-tax income = Pretax income × (1 – tax rate)

After-tax income = Pretax income – (Pretax income × tax rate)

After-tax income = Pretax income - Tax

Substituting information from the problem results in:

$55,250 = Pretax income - $10,725

Pretax income = $65,975

We can use the above formula to solve for the new tax rate.

After-tax income = Pretax income × (1 – tax rate)

$55,250 = $65,975 × (1 – tax rate)

Tax rate = $10,725/$65,975 = 16.26%

(59) [LO 5 RESEARCH] Locate the IRS Web site at www.irs.gov/ . For every $100 the IRS collected, how much was spent on the IRS collection efforts? What tax system criterion does this information help you to evaluate with respect to the current U.S. tax system?

The IRS' budget for exam and collections as a percentage of revenue collected is about .29 percent. Currently, the IRS collects over $4.09 trillion annually with a budget of $14.3 billion. Thus, for every $100 collected, about .35 cents is spent on collection efforts. This data is useful in evaluating "economy." See: https://www.irs.gov/statistics/soi-tax-stats-collections-costs-personnel-and-us-population-irs-data-book-table-31

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(60) [LO 4 RESEARCH] Using the Internet, find a comparison of income tax rates across states. What state currently has the highest income tax rate? In considering individual tax burdens across states, what other taxes should you consider?

California currently has the highest individual income tax rate (13.3%). To compare tax burdens across states, one should also consider real estate and other property taxes, excise taxes (gasoline taxes), and sales taxes.

1-1 [LO1] {AI critical thinking} Suppose you asked your favorite AI query tool the following question: "Who Cares about taxes and why?" The AI tool provided the following response:

Taxes are a crucial aspect of modern society, and many people and groups care about taxes for various reasons. Here are some of the key stakeholders and reasons why they care about taxes:

Individuals:

Individuals care about taxes because they are directly impacted by them. Taxes affect how much money people take home from their work, the cost of goods and services, and their overall financial well-being.

They may be concerned about the fairness of the tax system, the amount of taxes they owe, and how government spending is funded.

Governments:

Governments at all levels (federal, state, and local) rely on tax revenue to fund public services and infrastructure, such as schools, healthcare, defense, law enforcement, and social programs.

Effective tax policies are essential for government functioning and the ability to meet the needs of their citizens.

Businesses:

Businesses care about taxes because they are subject to various taxes, including corporate income tax, payroll taxes, and property taxes.

Taxes can affect a company's profitability and competitiveness. Business decisions, such as location and investment, can be influenced by tax considerations.

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Economists and Policy Experts:

Economists and policy experts study taxes to understand their impact on economic growth, income distribution, and overall economic stability.

They care about finding the right balance between taxation and public spending to promote a healthy economy.

Advocacy Groups:

Various advocacy groups, including those focused on social justice, environmental issues, and specific causes, care about taxes as they see tax policies as a way to advance their agendas.

They may advocate for progressive taxation, environmental taxes, or other tax-related policies that align with their goals.

Tax Professionals:

Tax professionals, including accountants, tax lawyers, and tax preparers, have a vested interest in tax policies and regulations as they help individuals and businesses navigate the tax system.

Staying informed about tax laws and changes is crucial for their practice.

Investors and Financial Markets:

Investors pay attention to taxes because they can affect investment decisions. Tax laws, such as capital gains and dividend tax rates, can influence investment strategies and financial markets' behavior.

International Organizations:

International organizations like the International Monetary Fund (IMF) and the Organization for Economic Co-operation and Development (OECD) study and promote best practices in taxation to foster global economic stability and cooperation.

In summary, taxes are a fundamental component of how societies are funded and function. Many stakeholders, including individuals, governments, businesses, economists, advocacy groups, tax professionals, investors, and international organizations, care about taxes due to their direct or indirect impact on financial well-being, public services, economic stability, and various societal objectives.

Is the AI response to the question accurate? Explain.

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Solution: The AI's response is entirely accurate. Modern society is funded by taxes and various groups and constituencies care about taxes for a variety of reasons. Individuals and businesses pay taxes and wonder about fairness. Governments create and impose taxes and attempt to meet the needs of their citizens. Tax professionals help their clients comply with the tax laws and also have to explain how complicated tax systems work. In summary, AI is right because taxes are a fundamental component of how societies are funded and function.

1-2 [LO1] {AI critical thinking} Suppose you asked your favorite AI query tool the following question: "How do Democrats and Republicans view a civilized society and a healthy economy?" The AI tool provided the following response:

The question of how Democrats and Republicans view a civilized society and a healthy economy is a complex and nuanced one, and it's important to note that these views can vary among individuals within each party. However, I can provide a general comparison and contrast of the typical positions associated with each party up to my knowledge cutoff date in January 2022. Keep in mind that political views and party platforms can evolve over time.

Democrats:

Civilized Society: Democrats often prioritize social justice and equality as key components of a civilized society. They tend to support policies aimed at reducing income inequality, expanding access to healthcare and education, and protecting the rights of marginalized groups such as minorities, women, and LGBTQ+ individuals. They advocate for a more inclusive and diverse society, supporting policies that address racial and gender disparities.

Healthy Economy: Democrats believe in a mixed-market economy with government regulation and intervention when necessary. They see government as having a role in ensuring economic stability, consumer protection, and environmental conservation. They often support progressive taxation, increased government spending on social programs, and a higher minimum wage as tools to create a healthier economy.

Republicans:

Civilized Society: Republicans tend to emphasize individual liberties, personal responsibility, and traditional values as essential for a civilized society. They often support a smaller government that interferes less in people's lives and encourages self-reliance. They may be more likely to oppose government intervention in areas like healthcare and education.

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Healthy Economy: Republicans typically favor a free-market approach to the economy, emphasizing deregulation, lower taxes, and limited government involvement. They argue that this approach stimulates economic growth, job creation, and innovation. They often support business-friendly policies and believe that reducing government spending is necessary to maintain a healthy economy.

Comparison:

Economic Growth: Both parties ultimately aim for a healthy economy but differ in their approaches. Democrats tend to advocate for more government involvement and regulation, while Republicans favor a more laissez-faire approach. Both argue that their approach leads to economic growth, but they differ on how to achieve it.

Social Welfare: Democrats are more likely to emphasize social welfare and safety nets as a means to create a civilized society, while Republicans emphasize personal responsibility and individual freedoms.

Equality: Democrats place a strong emphasis on addressing issues related to social and economic inequality, while Republicans may be more focused on the principles of equal opportunity and individual achievement.

Government Role: Democrats generally see a more substantial role for government in addressing societal and economic issues, while Republicans advocate for limited government intervention and greater reliance on the private sector.

Environmental Policy: Democrats are often associated with more aggressive environmental policies to combat climate change, while some Republicans may be more skeptical of such measures.

It's important to note that individual politicians within each party may hold varying degrees of alignment with their party's general stance on these issues, and public opinion can also influence party platforms over time. Additionally, the political landscape can change, so these general comparisons may not capture the full complexity of current positions within each party beyond my last knowledge update in January 2022.

Is the AI response to the question accurate? Explain.

Solution: The AI's response is quite accurate. Both political parties have general views on these important topics. However, individual politicians' views may vary within a party. Democrats do prioritize social justice and equality while Republicans value individual liberty and personal responsibility. They also differ in their views related to the economy. AI is also right that events after its cutoff date may have changed the answer. Since January 2022 we have had expensive wars in both Ukraine and Israel and there are a variety of opinions on how much military and humanitarian aid should be provided and who should be the recipients of that aid. Additionally, we have reached a debt crisis about funding our government deficits that is not fully resolved.

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Chapter 1
An Introduction to Tax

INSTRUCTOR'S MANUAL

Learning Objectives

1-1. Demonstrate how taxes influence basic business, investment, personal, and political decisions.
1-2. Discuss what constitutes a tax and the general objectives of taxation.
1-3. Describe the different tax rate structures and calculate a tax.
1-4. Identify the various federal, state, and local taxes.
1-5. Apply appropriate criteria to evaluate alternate tax systems.

Teaching Suggestions

This chapter provides an overview of why taxes are important, what a tax is, how to calculate a tax, various tax rates and tax rate structures, different types of federal, state, and local taxes, and how to evaluate a tax system. One intent of the chapter is to get students thinking about the pervasive influence of taxes and, thus, why it is important for a business or accounting student to understand taxes. Discussing how taxes affect decisions that they will face (buying a house, investing for retirement, etc.) is an effective way to pique students' interest.

This chapter also provides an opportunity to motivate students by discussing the political importance of taxes and the debate over alternative tax systems. Throughout most of the chapter, you can tie the material discussed back to the debate over alternative tax systems. This is easily done in the section on evaluating alternative tax systems and alternative tax rate structures but may also be done for other parts of the text. For example, when discussing how to calculate a tax, you can point out that once the tax base is computed, it is very easy to calculate virtually any tax. The difficulty is in determining the tax base. The implication of this understanding is that the tax rate structure (e.g., progressive versus proportional) has little effect on tax complexity.

In teaching this chapter, the time that you spend in class will vary based on how much discussion that you want to incorporate regarding evaluating tax systems and implicit taxes. Most of the concepts in this chapter are relatively straightforward, and thus, the chapter provides students with an introduction to tax without overwhelming them on the first day or so of class. This is particularly important if your students have some trepidation regarding their first tax course.

Implicit tax is typically a difficult concept for students to understand. The text provides a good overview of implicit tax. If you plan to cover implicit tax in some detail, you might alert students that this is a difficult concept and that they should be careful to get familiar with this discussion in the text prior to class.

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Assignment Matrix

			Learning Objectives					Text Features		
		Difficulty	LO1	LO2	LO3	LO4	LO5	Research	Planning	Forms
DQ1-1	5 min.	Easy	X							
DQ1-2	5 min.	Easy	X							
DQ1-3	5 min.	Easy	X							
DQ1-4	5 min.	Easy		X						
DQ1-5	5 min.	Medium		X						
DQ1-6	5 min.	Medium		X						
DQ1-7	5 min.	Medium		X						
DQ1-8	10 min.	Medium		X						
DQ1-9	5 min.	Medium		X						
DQ1-10	10 min.	Medium			X					
DQ1-11	15 min.	Medium			X					
DQ1-12	5 min.	Medium			X					
DQ1-13	15 min.	Medium			X					
DQ1-14	10 min.	Medium			X					
DQ1-15	5 min.	Easy				X				
DQ1-16	15 min.	Medium				X				
DQ1-17	5 min.	Easy				X				
DQ1-18	5 min.	Easy				X				
DQ1-19	10 min.	Medium				X				
DQ1-20	10 min.	Medium				X				
DQ1-21	10 min.	Easy				X				
DQ1-22	10 min.	Easy				X				
DQ1-23	15 min.	Medium				X				
DQ1-24	15 min.	Medium				X				
DQ1-25	15 min.	Medium				X				
DQ1-26	15 min.	Medium					X			
DQ1-27	15 min.	Medium					X			
DQ1-28	15 min.	Medium					X			
DQ1-29	15 min.	Medium			X		X			
DQ1-30	20 min.	Medium			X		X			
DQ1-31	15 min.	Medium				X	X			
DQ1-32	15 min.	Medium					X			
DQ1-33	15 min.	Medium					X			
P1-34	20 min.	Medium			X					
P1-35	20 min.	Medium			X					
P1-36	20 min.	Medium			X					
P1-37	20 min.	Medium			X					
P1-38	20 min.	Medium			X					
P1-39	20 min.	Medium			X					
P1-40	20 min.	Medium			X					

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P1-41	20 min.	Medium			X					
P1-42	20 min.	Hard			X	X				
P1-43	15 min.	Medium			X	X			X	
P1-44	15 min.	Medium			X	X			X	
P1-45	15 min.	Medium			X	X			X	
P1-46	15 min.	Medium			X	X			X	
P1-47	20 min.	Hard			X					
P1-48	20 min.	Hard			X					
P1-49	20 min.	Hard			X		X			
P1-50	20 min.	Hard			X		X			
P1-51	20 min.	Hard					X			
P1-52	20 min.	Hard					X			
P1-53	20 min.	Hard					X			
P1-54	20 min.	Hard					X			
P1-55	20 min.	Hard					X			
P1-56	20 min.	Hard					X			
P1-57	25 min.	Hard	X			X			X	
P1-58	25 min.	Hard			X		X		X	
P1-59	25 min.	Medium					X	X		
P1-60	25 min.	Medium				X		X		
ATQ1-1	20 min.	Medium	X					X	X	
ATQ-2	20 min.	Medium	X				X	X	X	

Lecture Notes

1) Who Cares About Taxes and Why?
   a) Businesses
   b) Politicians
   c) Individuals
2) What Qualifies as a Tax?
   a) Definition of a tax
      i) Key components of definition: payment is required, imposed by a government agency, and not directly tied to any benefit received by the taxpayer from the government
   b) Earmarked tax—definition and why this is considered a tax
   c) Quiz students on tax definition using examples in the PowerPoint slides.
3) How to Calculate a Tax
   a) Tax = Tax Base × Tax Rate
      i) Tax Base—what is actually taxed, usually expressed in monetary terms
      ii) Tax Rate—level of taxes imposed on the tax base, usually expressed as a percentage
      iii) Flat taxes
      iv) Graduated taxes
      v) Brackets
   b) Different ways to measure tax rates
      i) Marginal tax rate
         (1) Definition—tax rate that applies to the next additional increment of a taxpayer's taxable income (or deductions)

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(2) Formula — $\frac{\Delta \text{Tax}}{\Delta \text{Taxable Income}} = \frac{(\text{New Total Tax} - \text{Old Total Tax})}{(\text{New Taxable Income} - \text{Old Taxable Income})}$

(3) Useful in tax planning

ii) Average tax rate

(1) Definition—a taxpayer's average level of taxation on each dollar of taxable income

(2) Formula — $\frac{\text{Total Tax}}{\text{Taxable Income}}$

(3) Useful in budgeting tax expenses or comparing the relative tax burdens of taxpayers

iii) Effective tax rate

(1) Definition—taxpayer's average rate of taxation on each dollar of total income, including taxable *and* nontaxable income

(2) Formula — $\frac{\text{Total Tax}}{\text{Taxable Income}}$

(3) Provides the best depiction of a taxpayer's tax burden

iv) Work example in the PowerPoint slides calculating tax liability, marginal, average, and effective tax rates.

c) Tax rate structures

i) Proportional tax rate structure

(1) Definition—also known as a flat tax, imposes a constant tax rate throughout the tax base

(2) As the tax base increases, the taxes paid increase proportionally.

(3) The marginal tax rate remains constant and equals the average tax rate across the tax base.

(4) The most common example of a proportional tax is a sales tax.

ii) Progressive tax rate structure

(1) Definition—imposes an increasing marginal tax rate as the tax base increases.

(2) As the tax base increases, both the marginal tax rate and the taxes paid increase.

(3) Common examples of progressive tax rate structures include federal and state income taxes and federal estate and gift taxes.

iii) Regressive tax rate structure

(1) Definition—imposes a decreasing marginal tax rate as the tax base increases.

(2) As the tax base increases, the taxes paid increase, but the marginal tax rate decreases.

(3) Regressive tax rate structures are not common. In the United States, the Social Security tax and federal and state unemployment taxes employ a regressive tax rate structure.

iv) Discuss how different taxes can be viewed as having different rate structures when you consider effective tax rates versus marginal tax rates (e.g., the sales tax).

4) Types of Taxes

a) Federal taxes

i) Income tax: Imposed on individuals, corporations, estates, and trusts. The largest federal tax.

ii) Employment taxes: Employment taxes consist of the OASDI tax (Social Security tax) and the MHI tax (Medicare tax). The tax base for these taxes is wages or salary and employers and employees split these taxes equally. Self-employed individuals must pay these taxes in their entirety.

iii) Unemployment taxes: Employers are also required to pay federal and state unemployment taxes, which fund temporary unemployment benefits for individuals terminated from their jobs without cause.

iv) Excise taxes: A tax based on quantity of goods or services purchased. Common examples include taxes on alcohol, diesel fuel, gasoline, and tobacco products and on services such as telephone use and air transportation.

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v) Transfer taxes: The estate tax and gift taxes are based on the fair market values of wealth transfers upon death or by gift, respectively.

b) State and local taxes
   i) Income tax: Most states impose an income tax. The calculation varies by state.
   ii) Sales and use taxes: The tax base for a sales tax is the retail sales of goods and some services. Retailers collect and remit this tax. The tax base for the use tax is the retail price of goods owned, possessed, or consumed within a state that were *not* purchased within the state. The purpose of a use tax is to discourage taxpayers from buying goods out of state in order to avoid or minimize the sales tax in their home state.
   iii) Property taxes: Assessed on the fair market value of real property and personal property. These are ad valorem taxes.
   iv) Excise taxes

c) Implicit taxes
   i) Indirect taxes that result from a tax advantage the government grants to certain transactions.
   ii) Defined as the reduced before-tax return that a tax-favored asset produces because of its tax-advantaged status.
   iii) Difficult to quantify but important to understand in evaluating the relative tax burdens of tax-advantaged investments.
   iv) Walk through examples of implicit taxes in text.

5) Evaluating Alternative Tax Systems
   a) Sufficiency
      i) Involves assessing the aggregate size of the tax revenues that must be generated and making sure that the tax system provides these revenues.
      ii) Static forecasting: Forecasting revenue ignores how taxpayers might alter their activities in response to a tax law change and to base projected tax revenues on the existing state of transactions.
      iii) Dynamic forecasting: Forecasting that tries to predict possible responses by taxpayers to new tax laws.
      iv) Income effect: As tax rates go up, people will work harder to maintain same after-tax income.
      v) Substitution effect: As tax rates go up, people will substitute nontaxable activities because the marginal value of taxable ones has decreased.
      vi) Equity: A tax system is considered fair or equitable if the tax is based on the taxpayer's ability to pay.
      vii) Horizontal equity: Two taxpayers in similar situations pay the same tax.
      viii) Vertical equity: Taxpayers with greater ability to pay tax pay more tax relative to taxpayers with a lesser ability to pay tax. Vertical equity can be viewed in terms of tax dollars paid or tax rates. Vertical equity may also be evaluated using effective tax rates instead of simply considering the tax rate structure.
      ix) Certainty: Taxpayers should be able to determine when to pay the tax, where to pay the tax, and how to determine the tax.
   b) Convenience
      i) A tax system should be designed to be collected without undue hardship to the taxpayer.
   c) Economy
      i) A tax system should minimize the compliance and administration costs associated with the tax system.
      ii) Can be viewed from the taxpayer's and government's perspective.

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d) Compare the income tax and sales tax using the equity, certainty, convenience, and economy criteria.
e) Evaluating tax systems—the trade-off
   i) Much of the debate regarding alternative tax systems reduces to a choice between simplicity and fairness.
   ii) Those taxes that generally are simpler and easier to administer are typically viewed as less fair. Those taxes that may be viewed as more fair are often more complex to administer.

Class Activities

1. Suggested class activities

- **Designing a tax system:** Tell students that the class has just seceded from the United States and needs to develop a tax system sufficient to generate $XX, XXX from the class members. Have the students break into groups of three to five to design a tax system. As part of this task, they are to evaluate the advantages and disadvantages of their tax. The group judged by the class to have the most advantageous tax system receives bonus participation points for the day.
- **What is fair?** Put two different tax systems in front of the class—one a proportional tax rate, one a progressive tax system. Poll the class by show of hands to determine which tax system each person views as being fairer. Either in groups or as a class, have the students discuss why they view a specific system as being fairer. After the discussion, poll the class by show of hands to determine if anyone has changed their view of which tax is fairer. Then discuss with the class that there is no right answer as to which system is fairer. Instead, the answer depends on a person's individual views on fairness.
- **One versus the class:** Have one student volunteer as the "one" with the other class members being the "group." Use the key facts boxes in the text to develop multiple-choice questions (A, B, C answers) and then quiz the volunteer and the class on the questions. The volunteer and each class member will need to write the letters A, B, and C on separate sheets of paper and then hold up their appropriate response to the question. Once a student (either the "one" or a member of the "group") misses a question, he or she is eliminated from the competition. After six (or some other number) of questions, those students left standing receive bonus participation points for the day.
- **Discuss current tax policy topics:** Find a few recent articles discussing tax reform, the current income distribution, or the millionaire surtax. Post the articles so that students can read before class and ask a few questions to begin the class discussion.

2. Research activities

- Show the class the IRS website and some of the materials included in the website—e.g., publications, IRS forms, etc.
- Have students research the presidential candidates' tax platforms and compare and contrast the likely changes to the Internal Revenue Code.

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