

# Taxes, Borrowing, and the National Debt

---

## PURPOSE

The purpose of this chapter is to introduce students to the concepts of taxes, government borrowing, and the national debt. The objective is to explain and clarify these concepts without being overly technical. This is one of those chapters that covers material that everyone (i.e., the public) knows a little about (as in “taxes are too high, and so is the national debt!”), but nobody (i.e., the public) really understands enough to see the whole picture. The concept of government borrowing is particularly confusing to the public (and our students), as is the distinction between the budget deficit and the national debt. Our job is to convince our students that these topics are not as difficult as they might seem.

---

## LEARNING OBJECTIVES

The learning objectives for this chapter are:

1. to acquaint students with our various types of taxes, including income, social insurance, excise, sales, and property taxes.
  2. to acquaint students with the basic operation of our tax system, as well as the terms tax rate, tax base, exemption, standard deduction, and tax credit.
  3. to enable students to understand the effects of taxes on the macroeconomy, income distribution, and individual markets.
  4. to help students understand the distinction between taxes that are regressive, proportional, and progressive.
  5. to assist students in understanding the process of government borrowing and its effects on the macroeconomy, income distribution, interest rates, and crowding out.
  6. to help students understand the difference between budget deficits and the national debt, and the proper way to consider their size.
  7. to enable students to understand the impact of the national debt and proposals that require a balanced budget, as well as to develop their own perspectives (economic liberal or economic conservative) about these topics.
- 

## LECTURE SUGGESTIONS

- I generally spend two or three lectures on the material in this chapter, first to go over technical material, and then a day to just have fun with it. And it is fun, because we have the opportunity to challenge the opinions of the public, the politicians, the news media, and last of all the students.

*Our students generally come in with false views, believing that:*

- Taxes are too high and too complex. We'd all be better off with a simple proportional tax (though they are unfamiliar with this terminology) and lower taxes. (Of course, a proportional tax is not really simpler than a progressive tax, because it is the exemptions, deductions, and credits that make our income tax complicated.)

- Borrowing money is generally bad (remind them that many of them have borrowed money for tuition), and individual households must keep their finances in order (that is, balance their budgets). By extension, the government must balance its budget as well.
- If the government persists in its borrowing, there will be a day of reckoning and the nation will go bankrupt.
- The best way to force the government to keep its finances in order is to pass a law or constitutional amendment that requires the government to balance its budget.

*It is fun to show our students, carefully and clearly, that a government is not the same as a household and that the effects of government borrowing are not what they think!*

- Along the way in your lectures, you may want to emphasize the distinction between the budget deficit and the trade deficit, and you may wish to clarify that what students often refer to as the government “printing money” is not at all the same as government borrowing. (I have also chosen not to bring up the topic of “printing money.” You may have noticed that Donald Trump doesn’t understand it either.) You may also want to point out that the problem facing developing countries with their international debt is not at all the same type of issue as the United States national debt.
- Students may also have some difficulty thinking of tax payments as a percentage of income when considering the progressivity or regressivity of a tax. For example, they tend to think that a sales tax is proportional because it takes the same percentage of the item’s price, regardless of the purchaser’s level of income. So stress that these terms refer to *percentage of income*. In all of this, discussion of the concept of “tax base” is important.
- As in the last chapter, the macroeconomic examples do not include discussion of the multiplier. Instructors can introduce this topic in a nontechnical manner if they wish. There is some detail in the end note #1 to this chapter.
- One additional note: Appendix 16–1 shows examples of an excise tax in the cases of a perfectly inelastic demand and a perfectly inelastic supply. Other chapters have also developed elasticity topics in more detail in their appendices. Instructors are welcome to use these appendices as they wish. Note that Appendix 16–2 uses graphical analysis to show the effect of government spending on interest rates.

---

## ADDITIONAL DISCUSSION AND ACTION QUESTIONS

Some of the following additional discussion questions may be helpful in preparing lectures.

1. Calculate the effects of a sales tax on a hypothetical higher and lower income family over one year, using the following data:

	<b>Higher Income Family</b>		<b>Lower Income Family</b>	
Income	\$200,000		\$20,000	
Purchases of taxable goods and services	\$100,000		\$18,000	
Sales tax rate	5%		5%	
Amount of sales tax paid	\$5,000		\$900	
Amount of sales tax paid as a percentage of income	<u>\$5,000</u> \$200,000	(=2.5%)	<u>\$900</u> \$20,000	(=4.5%)

2. Show how the Social Security (and Medicare) tax is regressive by assuming a low-income person earns \$20,000 per year by working and a rich person earns \$200,000 per year by working. The rich person also receives \$400,000 in capital gains; \$300,000 in interest income; and \$500,000 in dividends. The rich person's total income is \$1,400,000. (Note: we are using the combined Social Security and Medicare tax rate of 7.65 percent in this example, as is done in this chapter in the text.)
  - a. First calculate the amount of Social Security (and Medicare) tax the poor person must pay, recalling that all of the poor person's income is taxed at the rate of 7.65 percent (because it is all earned through working and it all falls below the \$102,000 income limit). What is the total amount the poor person pays? ( $0.0765 \times \$20,000 = \$1,530$ ) What share of the poor family's income is this? (7.65%).
  - b. Now calculate the Social Security (and Medicare) tax the rich person must pay. Note that the last three forms of income (capital gains, interest income, and dividends) are not subject to the Social Security tax. Also, only the first \$102,000 of earnings from working are subject to the tax. What is the total amount the rich person must pay? ( $0.0765 \times \$102,000 = \$7,803$ ) What share of the rich family's income is this? (0.56%)
3. Consider a hypothetical market for strawberries (with normally sloped demand and supply curves). Draw the shift that will occur with the imposition of an excise tax. What is the effect on the price paid by consumers? What is the effect on the quantity of strawberries bought and sold? Who bears the burden of the excise tax? (Extra from Appendix 16–1: who bears the burden of the tax if the supply of strawberries is perfectly inelastic?)

---

## SOME ANSWERS AND COMMENTS ON THE TEXT DISCUSSION AND ACTION QUESTIONS

1. The Trump tax rate cuts made the progressive rate structure of the federal personal income tax less significant in our overall tax system, thereby reducing the progressivity (or increasing the regressivity) of our overall system. The benefits of the tax bill go largely to higher income people. Student opinions will vary.
2. Replacing the progressive rate structure of the federal personal income tax with a proportional one would make the overall tax more regressive (or less progressive). Many people who support a proportional rate structure do so as a means of simplifying the personal income tax. It is really only simplified if the number of exemptions, deductions, and credits are reduced or eliminated. Secondly, replacing the federal personal income tax with a national sales tax would also make our overall tax structure less progressive, thereby distorting the income distribution in favor of higher income groups.
3. People opposed to the estate tax often refer to it as the “death tax,” perhaps implying that, because we all must die, we all must pay it and that a tax on dying is somehow unfair. Clarify that a very small percent of our citizens pay this tax and that they are among the very highest income earners. They benefited further from the 2017 tax bill. Eliminating this tax entirely would only benefit the rich.
4. The earned income tax is hailed by economists as an efficient way to bolster the incomes of low-wage working people. It doesn't distort the labor markets in a way that minimum wages might.
5. Some question whether Social Security benefits should be provided to high-income retired people at the same time we are concerned about the viability of the Social Security program. On the other hand, the Social Security program was set up as a social insurance program for all eligible people who have paid into it. To eliminate benefits to the rich would substantially change the nature of the program.  
Nevertheless, it is possible to eliminate the regressivity of the social security taxes. Rather than taxing only income earned through working, all income could be taxed for social security purposes (including capital gains, interest income, dividends, rental income, and so on). This would have the effect of making the social security tax proportional up to the ceiling on income which is taxed. Secondly, this ceiling on income could become a floor instead of a ceiling; that is, all income below that level would not be taxed, while all income above it would be taxed. Finally, benefits might be reduced for higher income individuals and taxes might be fully placed on the benefits to these people. All of these options will clearly raise even more issues!

6. Most economists believe that excise taxes are placed on goods and services because their inelastic demand results in higher government tax revenue. There are also other justifications for excise taxes. The gasoline tax is used on highway construction and repair. It is proposed that a higher cigarette tax be imposed (on the grounds that smokers create more medical bills) and be used to finance expanded healthcare for children. Ask students who smoke whether they would cut down if the price of cigarettes doubles as a result of the tax. Then ask them whether they would cut down on their purchase of soda pop if the price of a six-pack doubles as a result of an excise tax. My guess is that your students will not cut down on cigarettes very much, but will cut down on purchases of pop a lot. You can also challenge the concept of a “sin tax” if you wish (imposed because the product is “sinful” or because the product will reap high tax revenue for the government!). What justification could be made for a higher excise tax on alcohol?
7. Students are interested in issues of “fairness,” especially when it comes to their own taxes. My experience suggests that they favor a proportional tax, because it treats people “equally.” They generally haven’t yet developed the idea that one purpose of taxes can be to redistribute income. They also need to think about whether a tax of ten percent of the income of a high-income person (for example) is the same as ten percent of the income of a low-income person, in terms of its “burden” on the person. Students also seem to like the concept of taxing people who benefit from an activity (e.g., an excise tax on gasoline used for highway repair) or create damage (e.g., an excise tax on cigarettes, alcohol, or pollution).
8. A gasoline tax is an effective way to curtail gasoline purchases and driving, to a degree. It depends on things like alternative transportation arrangements. And, it is very regressive for low income people who need to travel to work. You can use Appendix 16–1 to raise the issue of elasticity. Demand tends to be more elastic the longer the time period under consideration.
9. Student activity.
10. Student activity.
11. Student answers will vary.
12. Student answers will vary.
13. Economic conservatives are usually pretty vocal about their desires to cut taxes and budgets (though they often support greater funding for the military, homeland security, and so on). As a result of tax cuts and continued spending, budget deficits will rise and we know this also tends to infuriate conservatives.

---

## SUGGESTED TEST QUESTIONS

### *Multiple-Choice Questions*

1. Government securities consist of:
  - a. the treasury building and the federal reserve system.
  - b. government bonds and treasury bills.**
  - c. corporate bonds and stocks.
  - d. All of the above
2. A tax base is:
  - a. always expressed as a percentage.
  - b. always expressed as some form of income.
  - c. an item that has a tax credit applied to it.
  - d. an item that has a tax rate applied to it.**

3. Which tax brings in the greatest share of federal government tax revenue?
  - a. **federal personal income tax**
  - b. social security tax
  - c. federal excise taxes
  - d. tariffs
4. In 2018, the U.S. maximum federal personal income tax rate on the highest increments of income was:
  - a. 74%.
  - b. 55%.
  - c. **37%.**
  - d. 5%.
5. About what share of federal tax revenue comes from the payroll tax?
  - a. 22%
  - b. **33%**
  - c. 66%
  - d. 80%
6. An amount of money that can be deducted from household income before personal tax rates are applied is a(n):
  - a. **exemption.**
  - b. tax credit.
  - c. tax rate.
  - d. tax base.
7. The earned income tax credit:
  - a. is available to low-income eligible working people.
  - b. is refundable.
  - c. has increased in recent years.
  - d. **All of the above**
8. Excise taxes:
  - a. **operate like sales taxes but are applied only to specific goods and services.**
  - b. bring in approximately 20% of total federal tax revenue.
  - c. bring in approximately 50% of total state and local tax revenue.
  - d. None of the above
9. Which of the following brings in the largest share of the total of state and local taxes?
  - a. **property taxes**
  - b. sales taxes
  - c. excise taxes
  - d. corporate income taxes
10. Which of the following is a regressive tax?
  - a. sales tax
  - b. property tax
  - c. Social Security tax
  - d. **All of the above**
11. Which of the following is correct? A regressive tax:
  - a. takes a larger amount of tax dollars from low-income people than high-income people.
  - b. **takes a larger percentage of income from low-income people than high-income people.**
  - c. takes a larger percentage of income from high-income people than low-income people.
  - d. takes the same percentage of income from high-income people as low-income people.

12. Which causes greater expansion of the economy?
- an increase in taxes only
  - an increase in government spending financed by an increase in taxes
  - an increase in government spending financed by government borrowing**
  - The impact of all of these is equal.
13. What share of the national debt is owned by (owed to) foreigners?
- 85.5%
  - 26.1%
  - 46.4%**
  - 66.8%
14. What effects will a tax cut theoretically have on the macro economy?
- an increase in GDP
  - an increase in employment
  - a rise in the average price level
  - All of the above**
15. A property tax on rental housing will generally cause:
- an increase in rent.**
  - an increase in the quantity of rental housing.
  - an increase in profits to rental property owners.
  - All of the above
16. The 2017 tax bill was supported by:
- President Trump.
  - the Senate and the House of Representatives.
  - most Republicans.
  - All of the above**
17. Government tax revenue of \$100 billion and government spending of \$80 billion in any given year results in:
- a budget deficit of \$20 billion.
  - a budget surplus of \$20 billion.**
  - a national debt of \$20 billion.
  - a national surplus of \$20 billion.
18. The difference between federal government spending and federal government tax revenue in a particular year is:
- the budget deficit.**
  - the national debt.
  - crowding out.
  - the trade deficit.
19. Economists generally believe that a law or constitutional amendment requiring a balanced budget would:
- be extremely difficult to implement.
  - limit the government's use of fiscal policy.
  - destabilize the economy.
  - All of the above**
20. Why do conservatives generally favor reductions in taxes?
- prefer income to be concentrated in the private sector rather than the government.
  - prefer lowered income taxes to increase personal incentives to work.
  - believe lowered savings taxes encourage personal savings.
  - All of the above**

21. Who will generally bear the burden of an excise tax?

- a. consumers only
- b. suppliers only
- c. both consumers and suppliers**
- d. the government

*(Appendix 16–2)*

22. Increased government spending financed by government borrowing will generally cause:

- a. an increase in interest rates.
- b. an expansion of the economy.
- c. some crowding out.
- d. All of the above**

23. An increase in the demand for loanable funds will generally cause:

- a. an increase in the interest rate.
- b. an increase in the quantity demanded of loanable funds.
- c. an increase in the quantity supplied of loanable funds.
- d. All of the above**

24. Which of the following can be caused by government borrowing?

- a. increased interest rates
- b. a less equal income redistribution
- c. a transfer of interest payments outside of the United States
- d. All of the above**

### *True-and-False Questions*

- 1. The government borrows money when it issues government securities. **(T)**
- 2. The standard deduction is a fixed amount of income that taxpayers can deduct from their taxable income when calculating their personal income taxes, if other deductions are not claimed. **(T)**
- 3. A tax credit directly reduces the amount of tax payable to the government. **(T)**
- 4. A refundable tax credit means that it is available only if the person pays income taxes. **(F)**
- 5. A payroll tax is deducted directly from the worker's paycheck. **(T)**
- 6. In 2016, excise taxes brought in about 20 percent of federal tax revenue. **(F)**
- 7. In 2016, corporate income taxes brought in about 50 percent of federal tax revenue. **(F)**
- 8. In 2016, property taxes brought in about 30% of the total of state and local tax revenue. **(T)**
- 9. Property taxes bring in the largest share of combined state and local government tax revenue. **(T)**
- 10. In 2016, the corporate tax brought in about 4% of the total of state and local tax revenue. **(T)**
- 11. Increased government spending financed by increased taxes creates greater expansion of the economy than if the increased government spending is financed by government borrowing. **(F)**
- 12. It is probably better to finance government purchases by taxes when the economy is operating at full employment. **(T)**
- 13. A regressive tax is one that takes a larger percentage of income from low-income people than from high-income people. **(T)**
- 14. Property taxes are generally considered to be progressive. **(F)**

15. The effect of the tax cuts under President George W. Bush and Donald Trump was a reduced progressivity (or increased regressivity) of the overall U.S. tax system. (T)
16. In 2016, the national debt was about 70% of GDP. (T)
17. About 20 percent of the national debt is owed to foreigners. (F)
18. Government borrowing has the positive consequences of enabling the government to expand the economy as needed and to make expenditures that can benefit our society. (T)
19. The total amount of money that the government has ever borrowed and not yet repaid is the national debt. (T)
20. Property taxes are used primarily to finance local public schools. (T)
21. The national debt will eventually bankrupt the nation. (F)
22. The United States has the highest maximum federal personal income tax rate in the Western industrialized world. (F)
23. The United States has the lowest maximum federal personal income tax rate in the Western industrialized world. (F)
24. Government borrowing can result in a redistribution of income from low-income people to high-income people. (T)

**(Appendix 16-1)**

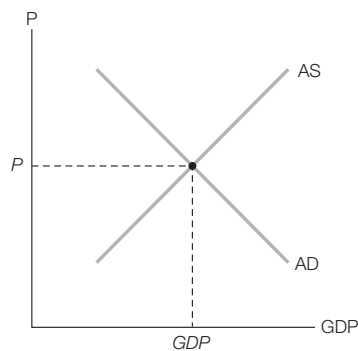
25. An excise tax imposed on a product with a perfectly inelastic demand will cause a large increase in the price of the product. (T)
26. An excise tax imposed on a product with a perfectly inelastic supply will cause a large increase in the price of the product. (F)
27. An excise tax generally results in a higher price of the product, though the price usually does not increase by the full amount of the excise tax. (T)

**(Appendix 16-2)**

28. Increased government borrowing will generally cause a decrease in interest rates. (F)
29. Crowding out refers to a situation whereby increased government borrowing results in increased interest rates, thereby causing some reduction in private borrowing. (T)

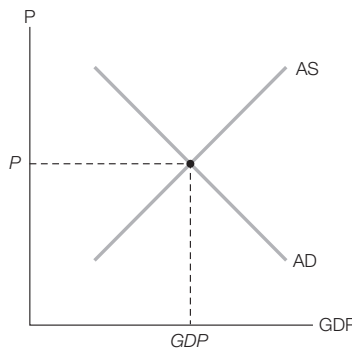
**Short-Answer Questions**

1. Show in the graphs the effects of the following on GDP:
  - a. Increased government purchases of highway construction, financed by government borrowing.



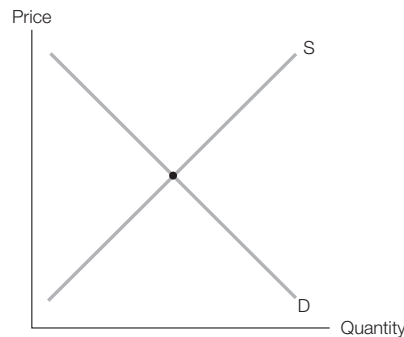


b. Increased government purchases of highway construction, financed by increased taxes.



c. Which situation results in a larger increase in GDP, assuming the increase in government spending is the same in each case? (**a**).

2. Consider the hypothetical market for alcohol. Draw the shift that will occur with the imposition of an excise tax. What is the effect on the price paid by consumers? (**increase**) What is the effect on the quantity of alcohol bought and sold? (**decrease**) Who bears the burden of the excise tax? (**consumer and supplier**) [Appendix: who bears the burden of the tax if the demand for alcohol is perfectly inelastic? (**consumer**)].



3. Calculate the effects of a sales tax on a hypothetical higher and lower income family, by calculating the values for the bottom two rows of the following table. (Answers are shown in parentheses.)

	<b>Higher Income Family</b>	<b>Lower Income Family</b>
Income	\$200,000	\$50,000
Purchases of taxable goods and services	\$100,000	\$45,000
Sales tax rate	10%	10%
Amount of sales tax paid	<b>\$10,000</b>	<b>\$4,500</b>
Amount of sales tax paid as a percentage of income	<b>5%</b>	<b>9%</b>

**Critical Thinking Question**

Students now have a much better understanding of the effects of taxes in our economy. Taking into account their views about government spending programs and income distribution, what changes would they like to see in our nation’s spending and tax policies?

## INTERNET RESOURCES

There are regularly new proposals for the government budget and taxes. Students will need to keep track of developments in these matters by reading national newspapers. Some of these were listed in earlier chapters. Additional sites are listed below.

**<http://www.usatoday.com/>** (*USA Today*)

**<http://www.nytimes.com/>** (*The New York Times*)

**<http://wsj.com/>** (*The Wall Street Journal* Interactive Edition)

Other helpful websites include the following:

**<http://www.census.gov>**

(This website provides information on government spending and tax revenue.)

**<http://www.treas.gov/>**

(This site provides information on the budget deficit and the national debt.)