Liberty High School

AP Macroeconomics Mr. Lopez

Chapter 8

Study Guide

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_

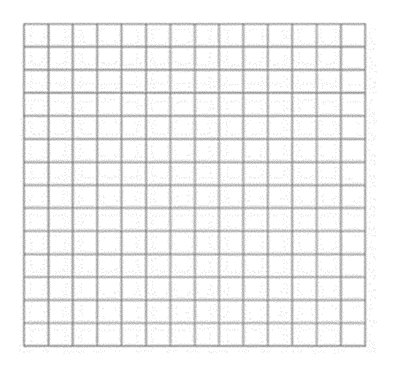
Part 1 – Key Terms

1. Tax Wedge:
2. Deadweight loss:
3. Laffer curve:

Part 2 – Problems and Short Answers



1. The graph above shows the market for tires. Suppose that a $12.00 road use tax is placed on each tire sold.
   1. Locate Consumer surplus, producer surplus, tax revenue and the deadweight loss.
   2. Why is there a deadweight loss in the market for tires after the tax is imposed?
   3. What is the value of the tax revenue collected by the government? Why wasn’t the government able to collect $12.00 per tire on 60 tires sold? (The original equilibrium quantity)
   4. What is the value of the tax revenue collected from the buyers? What is the value of the tax revenue collected from the sellers? Did the burden of the tax fall more heavily on the buyers or the sellers? Why?
   5. Suppose over time, buyers of tires are able to substitute away from auto tires (they walk or ride bicycles). Because of this, their demand for tires becomes more elastic. What will happen to the size of the deadweight loss in the market for tires? Why?



1. Use the graph above which shows the market for DVDs, to answer the following questions.
   1. Complete the table. (Note To calculate deadweight loss, the area of the triangle is ½ base x height)
   2. As the tax is increased, what happens to the amount of tax revenue collected? Why?

|  |  |  |
| --- | --- | --- |
| **Tax Per Unit** | **Tax Revenue Collected** | **Deadweight Loss** |
| $0 |  |  |
| 3 |  |  |
| 6 |  |  |
| 9 |  |  |
| 12 |  |  |
| 15 |  |  |
| 18 |  |  |

* 1. At a tax of $18.00 per DVD, how much tax revenue is collected? Why?
  2. If the government wanted to maximize tax revenue, what tax per unit should it impose?
  3. If the government wanted to maximize efficiency (total surplus) what tax unit should it impose?
  4. What happens to the deadweight loss due to the tax as the tax is increased? Why?

1. Why does a tax reduce consumer surplus?
2. Why does a tax reduce producer surplus?
3. Why does a tax generally produce a deadweight loss?
4. Under what conditions would a tax fail to produce a deadweight loss?
5. When a tax is placed on a good, does the government collect revenue equal to the loss in total surplus due to the tax? Why or why not?
6. Suppose Rachel values having her house painted at $1,000. The cost for Paul to paint her house is $700. What is the value of the total surplus or gains from trade on this transaction? What is the size of the tax that would eliminate this trade? What is the deadweight loss from this tax? What generalization can you make from this exercise?
7. Would you expect a tax on gasoline to have a greater deadweight loss in the short run or long run? Why?
8. Suppose the supply of oil is relatively inelastic. Would a tax on oil generate a large deadweight loss? Why or why not? Who would bear the burden of the tax, the buyer or the seller? Why?
9. As a tax on a good increases, what happens to the tax revenue? Why?
10. As a tax on a good increases, what happens to the deadweight loss from the tax? Why?

Part 3 – True or False

16..\_\_\_\_\_\_\_In general, a tax raises the price the buyers pay, lowers the price the sellers receive, and reduces the quantity sold.

17.\_\_\_\_\_\_\_If a tax is placed on a good and it reduces the quantity sold, there must be a deadweight loss from the tax.

18.\_\_\_\_\_\_\_Deadweight loss is the reduction in consumer surplus that results from a tax.

19.\_\_\_\_\_\_\_When a tax is placed on a good, the revenue the government collects is exactly equal to the loss of consumer and producer surplus from the tax.

20.\_\_\_\_\_\_\_If John values having his hair cut at $20.00 and Mary’s cost of providing the haircut is $10.00, any tax on haircuts larger than $10.00 will eliminate the gains from trade and cause a $20.00 loss of total surplus.

21.\_\_\_\_\_\_\_If a tax is placed on a good in a market where supply is perfectly inelastic, there is no deadweight loss and the sellers bear the entire burden of the tax.

22.\_\_\_\_\_\_\_A tax on cigarettes would likely generate a larger deadweight loss than a tax on luxury boats.

23.\_\_\_\_\_\_\_A tax will generate a greater deadweight loss if supply and demand are inelastic.

24.\_\_\_\_\_\_\_A tax causes a deadweight loss because it eliminates some of the potential gains from trade.

25.\_\_\_\_\_\_\_A larger tax always generates more tax revenue.

26.\_\_\_\_\_\_\_A larger tax always generates a greater deadweight loss.

27.\_\_\_\_\_\_\_If an income tax rate is high enough, a reduction in the tax rate could increase tax revenue.

28.\_\_\_\_\_\_\_A tax collected from buyers generates a smaller deadweight than a tax collected from sellers.

29.\_\_\_\_\_\_\_If a tax is doubled, the deadweight loss from the tax more than doubles.

30.\_\_\_\_\_\_\_A deadweight loss results when a tax causes market participants to fail to produce and consume units on which the benefits to the buyers exceed the costs to the sellers.

Part 4 –Additional Critical Thinking

You are watching the local news report on television with your best friend. The news anchor reports that the state budget has a deficit of $100 million. Because the state currently collects exactly $100 million from its 5% sales tax, your best friend says “ I can tell them how to fix the deficit. They should simply double the sales tax to 10%. This will double their tax revenue from $100 million to $200 million and provide the needed $100. Million”.

31. Is it true that doubling a tax will always double tax revenue? Why or why not?

32. Will doubling the sales tax affect the tax revenue and the deadweight loss in all markets to the same degree? Explain.