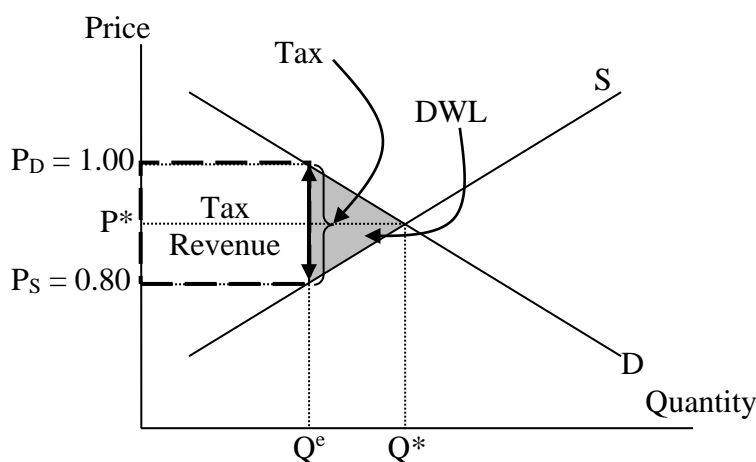


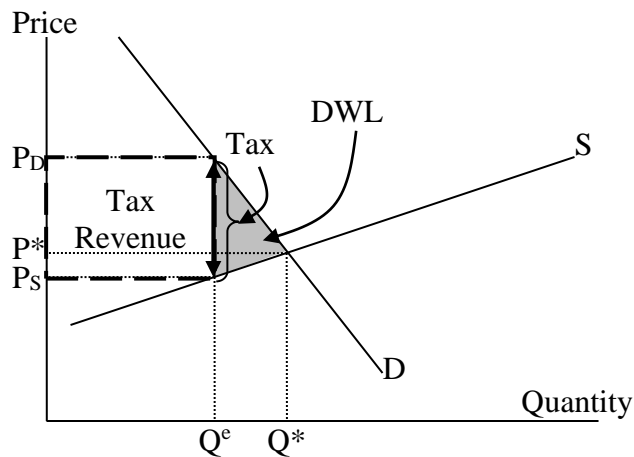
## LECTURE 23: TAXES AND SUBSIDIES

### I. Excise (or Specific) Taxes

- a. An excise (or specific) tax is a tax the government collects on a unit of a commodity sold. Gasoline, for example, has an excise tax on it as does alcohol and cigarettes.
- b. Illustrating an excise tax in a supply and demand graph begins with knowing how much the tax is. Then find that distance between the supply and demand curves in the range it normally produces. At that point is the new government-influenced quantity,  $Q^e$ . Excise taxes will create deadweight loss (by artificially reducing quantity exchanged) and reduce consumer and producer surplus.
- c. Below illustrates a tax of \$0.20, creating a revenue of \$0.20 times  $Q^e$ . For example, if  $Q^e$  was 15,000, total tax revenue would be \$3,000. Consumers pay \$1.00, producers receive \$0.80, and the government keeps the rest.



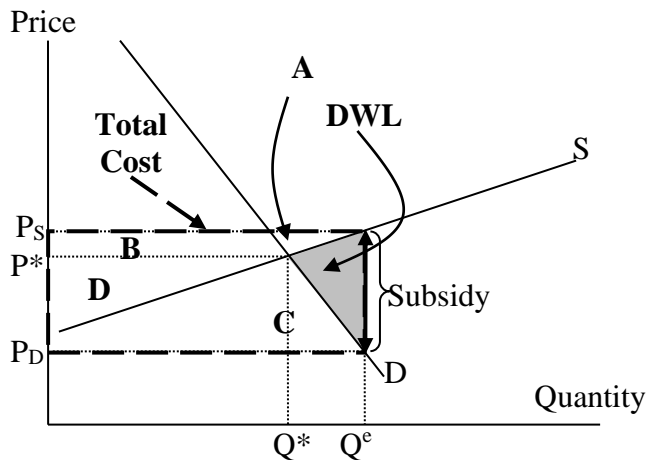
- i. Tax revenue and deadweight loss combined equal the loss of consumer surplus plus the loss of producer surplus.
- d. Consider the market for cigarettes. It's pretty easy to get into the industry (elastic supply) but pretty hard to quit (inelastic demand). Thus smokers typically bear the cost of a cigarette excise tax. ( $P_D$  is the price the demand side pays;  $P_S$  is the revenue the supply side receives.)



- e. Who pays the tax doesn't depend on who the law says should pay. It's determined by the relative elasticities of supply and demand.

## II. Subsidies

- a. These work just like taxes except we "wedge" in the value on the other side of the supply and demand curve (expanding output rather than reducing it).



- b. Instead of getting revenue, the subsidy costs the government the large rectangle. Note as well that the price consumers pay is *lower* than equilibrium and the price suppliers receive is *higher* than equilibrium.
- i. When you consider increases in producer and consumer surplus, this diagram gets a bit complicated since there are so many overlapping bits.  $A + B$  is the increase in producer surplus.  $C + D$  is the increase in consumer surplus.
  - ii. The total cost to the government is  $A + B + C + D + DWL$ .
- c. Note who gets most of the subsidy is the same as who pays most of the tax. Elasticity cuts both ways.