

viewed as raising the costs of production, this could also be represented by a leftward shift of the supply curve. The new supply curve would intercept the demand at the new quantity Q_t . For simplicity, the diagram above omits the shift in the supply curve.

The tax revenue is given by the shaded area, which is obtained by multiplying the tax per unit by the total quantity sold, Q_t . The tax incidence on the consumers is given by the difference between the price paid, P_c and the initial equilibrium price, P_e . The tax incidence on the sellers is given by the difference between the initial equilibrium price, P_e and the price they receive after the tax is introduced, P_p .

In diagram A, above on the left, the tax burden falls disproportionately on the sellers, and a larger proportion of the tax revenue—the shaded area—is due to the resulting lower price received by the sellers than by the resulting higher prices paid by the buyers.

On the other hand, if we go back to our example of cigarette taxes, the situation would look more like diagram B—above on the right—where the supply is more elastic than demand. The tax incidence now falls disproportionately on consumers, as shown by the large difference between the price they pay, P_c and the initial equilibrium price, P_e . Sellers receive a lower price than before the tax, but this difference is much smaller than the change in consumers' price.

Using this type of analysis, we can also predict whether a tax is likely to create a large revenue or not. The more elastic the demand curve, the easier it is for consumers to reduce quantity instead of paying higher prices. The more elastic the supply curve, the easier it is for sellers to reduce the quantity sold instead of taking lower prices. In a market where both the demand and supply are very elastic, the imposition of an excise tax generates low revenue.

People often think that excise taxes hurt mainly the specific industries they target. But ultimately, whether the tax burden falls mostly on the industry or on the consumers depends simply on the elasticity of demand and supply.

Review question

Under which circumstances does the tax burden fall entirely on consumers?

Critical-thinking question

In a market where the supply curve is perfectly inelastic, how does an excise tax affect the price paid by consumers and the quantity bought and sold?

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