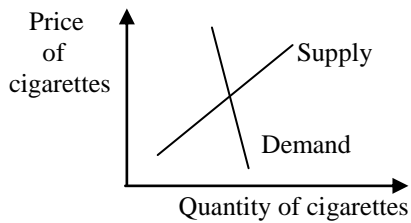


Supply and Demand. Market Equilibrium.

Problem 1 (APT'94, P2)

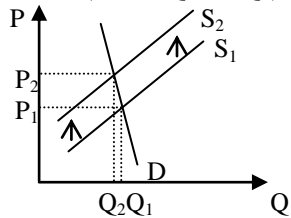


The demand and supply curves of cigarettes are depicted in the diagram above.

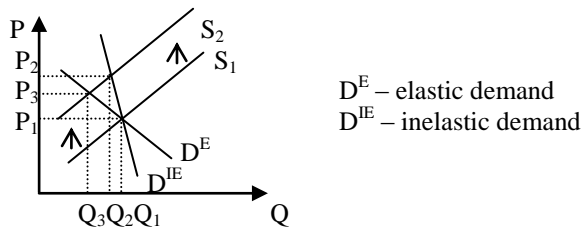
- (a) Use supply and demand analysis to describe the impact of a per-unit tax on each of the following.
- (i) The price paid by consumers for cigarettes
 - (ii) The quantity of cigarettes sold
- (b) If the demand for cigarettes becomes more elastic, explain how each of the following will differ from part (a).
- (i) The price and quantity sold of cigarettes
 - (ii) The government's tax revenues

Sample answer:

- (a) Imposition of a per-unit tax will shift the supply curve up by the tax rate as firms will try to pass on the tax burden to the consumers in the form of a higher price. Since the demand for cigarettes is rather inelastic, the price paid by consumers will increase substantially (from P_1 to P_2), while the quantity of cigarettes sold will only slightly go down (from Q_1 to Q_2).

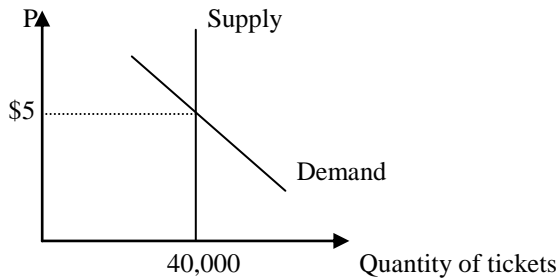


- (b) (i) If the demand for cigarettes became more elastic, the demand curve would get flatter. In that case, the imposition of a per-unit tax would produce a smaller increase in price (up to P_3), but a much greater reduction in the quantity of cigarettes sold (from Q_1 to Q_3):



- (ii) Since tax revenue is equal to the quantity times the tax rate, the increase in the elasticity of demand would considerably cut government's receipts (for the same level of the tax rate there would be a far smaller quantity sold in the market).

Problem 2 (APT'96, P2)

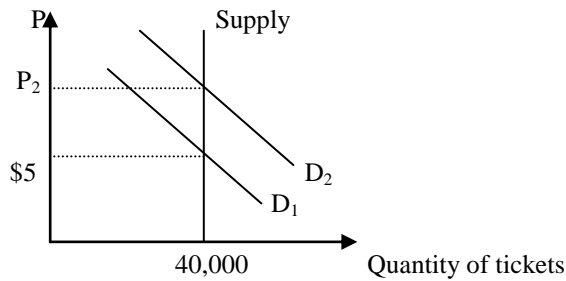


The Toledo arena holds a maximum of 40,000 people, as indicated in the graph above. Each year the circus holds eight performances, all of which are sold out.

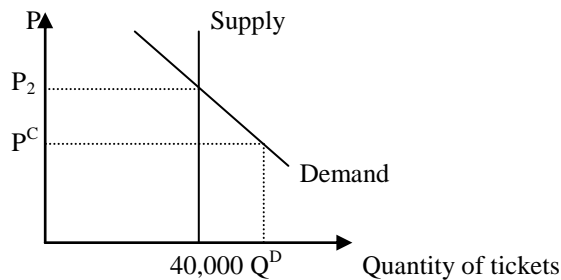
- (a) Analyze the effect on each of the following of the addition of a fantastic new death-defying trapeze act that increases the demand for tickets.
 - (i) The price of tickets
 - (ii) The quantity of tickets sold
- (b) The city of Toledo institutes an effective price ceiling on tickets. Explain where the price ceiling would be set, Explain the impact of the ceiling on each of the following.
 - (i) The quantity of tickets demanded
 - (ii) The quantity of tickets supplied
- (c) Will everyone who attends the circus pay the ceiling price set by the city of Toledo? Why or why not?

Sample answer:

- a) The effect of the addition of the new trapeze act will be to shift the demand curve to the right. However, since the supply curve is perfectly inelastic (the number of seats is fixed), there will be no change in the number of tickets sold and the only result will be an increase in the price of tickets:



- b) To be effective the price ceiling must be set below the equilibrium price, otherwise, the price that is already established in the market will satisfy the required maximum and the introduction of the price control will make no difference whatever. If the price ceiling is set below P_2 per ticket, then the quantity of tickets demanded will increase to Q^D . The supply of tickets does not change with price and depends only on the size of the arena, where the performances are held. Hence, wherever the price ceiling is set, it will not affect the quantity of tickets supplied:



- c) Obviously, everyone who attends the circus will have to pay the ceiling price. Even if the circus could exercise price discrimination, it would not do so anyway, since, on the one hand, it is not allowed to charge a price higher than the one set by the city of Toledo, and, on the other, it would be ill-advised to charge a lower price, as there is already excess demand for tickets and the circus is unable to provide seats for everybody who wants to watch the performance.