

Introduction to Economics

Elasticity

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Introduction to Economics, Sloman, J., 2012. Economics. 8th Ed. Harlow: Pearson

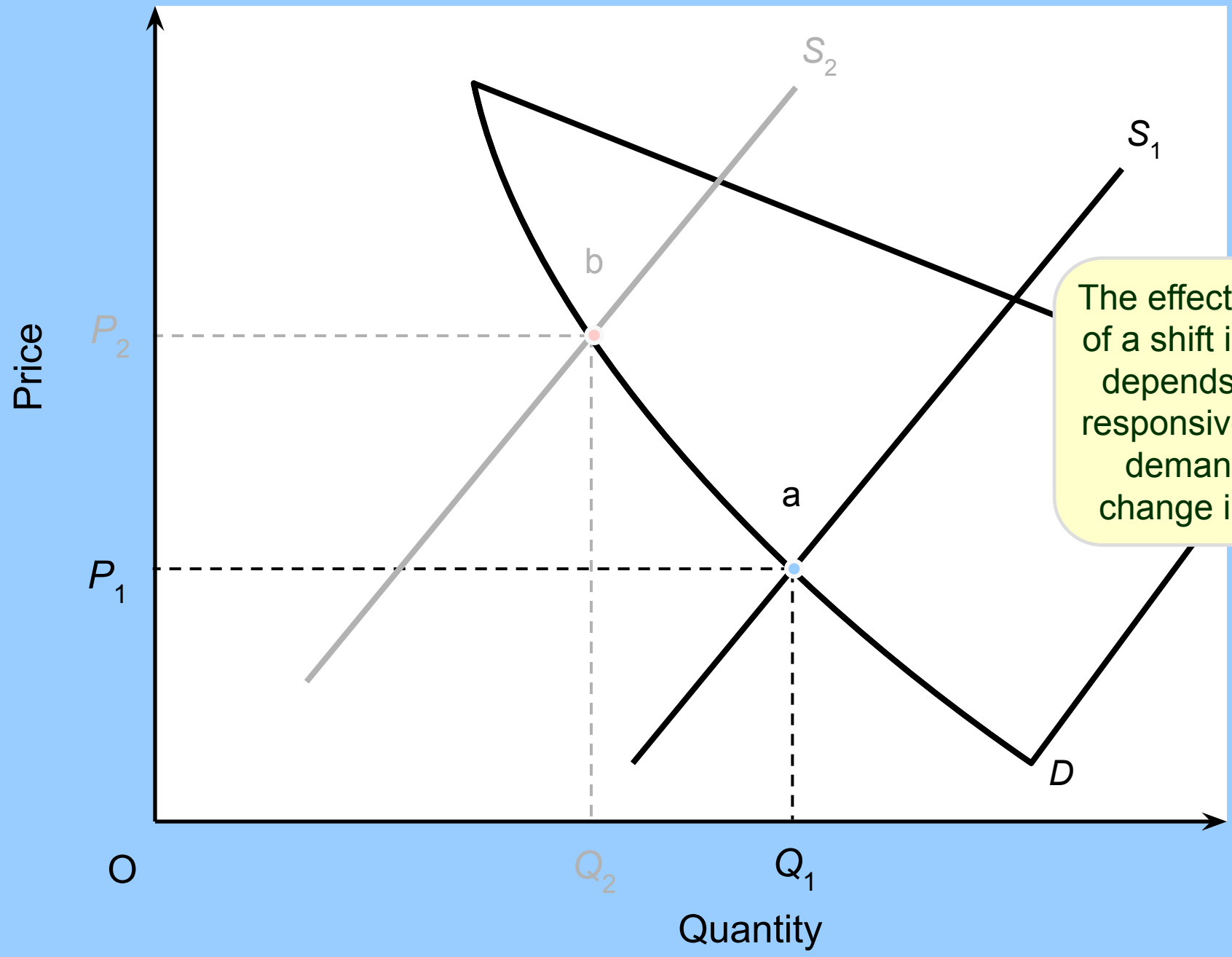


Elasticity

- Price elasticity of demand
- Price elasticity of supply
- Measuring elasticity
- Interpreting the figures for elasticity

- $P\,\epsilon_{D} = \frac{\%\Delta Q_{D}}{\%\Delta P}$

Market supply and demand



The effect on price of a shift in supply depends on the responsiveness of demand to a change in price.


Price elasticity of demand

- The responsiveness of quantity demanded to a change in price
- One of the most important concepts in economics
- Price elasticity of demand varies enormously from product to product (oil & cabbage)

Price Elasticity of Demand

- Measures the responsiveness of quantity demanded to changes in a good's own price.

- The price elasticity of demand is the percent change in quantity demanded divided by the percent change in price that caused the change in quantity demanded.

Price Elasticity of Demand

- Determinants of price elasticity of demand
  - number and closeness of substitute goods
  - proportion of income spent on the good
  - the time period



Measuring the Price Elasticity of Demand

- What we want to compare is the size of the change in quantity demanded with the size of the change in price.

- percentage change in quantity demanded divided by percentage change in

- $P\,\epsilon_{\,\mathrm{D}} = \dfrac{\%\Delta Q_{\mathrm{D}}}{\%\Delta P}$



- ϵ (the Greek epsilon) is the symbol used for elasticity

- Δ (the capital Greek Delta) is the symbol for "a change in"

Changes are measured in % - £1 increase depends on original price

Can of beans

House


- 40% rise in price of oil causes a 10% fall in quantity demanded

- -10%/40% = -0.25

Interpreting the figure for elasticity of demand

- Demand curves generally slope downward
- Price and quantity change in opposite directions
- A rise in price (a positive figure) will cause a fall in the quantity demanded (a negative figure)
- A fall in price will cause a rise in quantity demanded
- When working out price elasticity of demand we either divide a negative figure by a positive figure

Or a positive figure by a negative figure

Either way end up with a negative figure



Interpreting the figure for elasticity of demand

- The value greater or lesser than 1
- Elastic $\epsilon > 1$
- Inelastic $\epsilon < 1$
- Unit elastic $\epsilon = 1$



Price Elasticity of Demand and Consumer Expenditure

- One of the most important applications of price elasticity of demand concerns total amount of money consumers spend on a product
- Total Consumer Expenditure - TE
- Price multiplied by Quantity
- TE = P x Q

Price Elasticity of Demand and Consumer Expenditure

- Defining total consumer expenditure
  - $TE = P \times Q$
- Illustrating TE graphically
- Effects of a price change: elastic demand
  - *P* rises: *TE* falls
  - *P* falls: *TE* rises



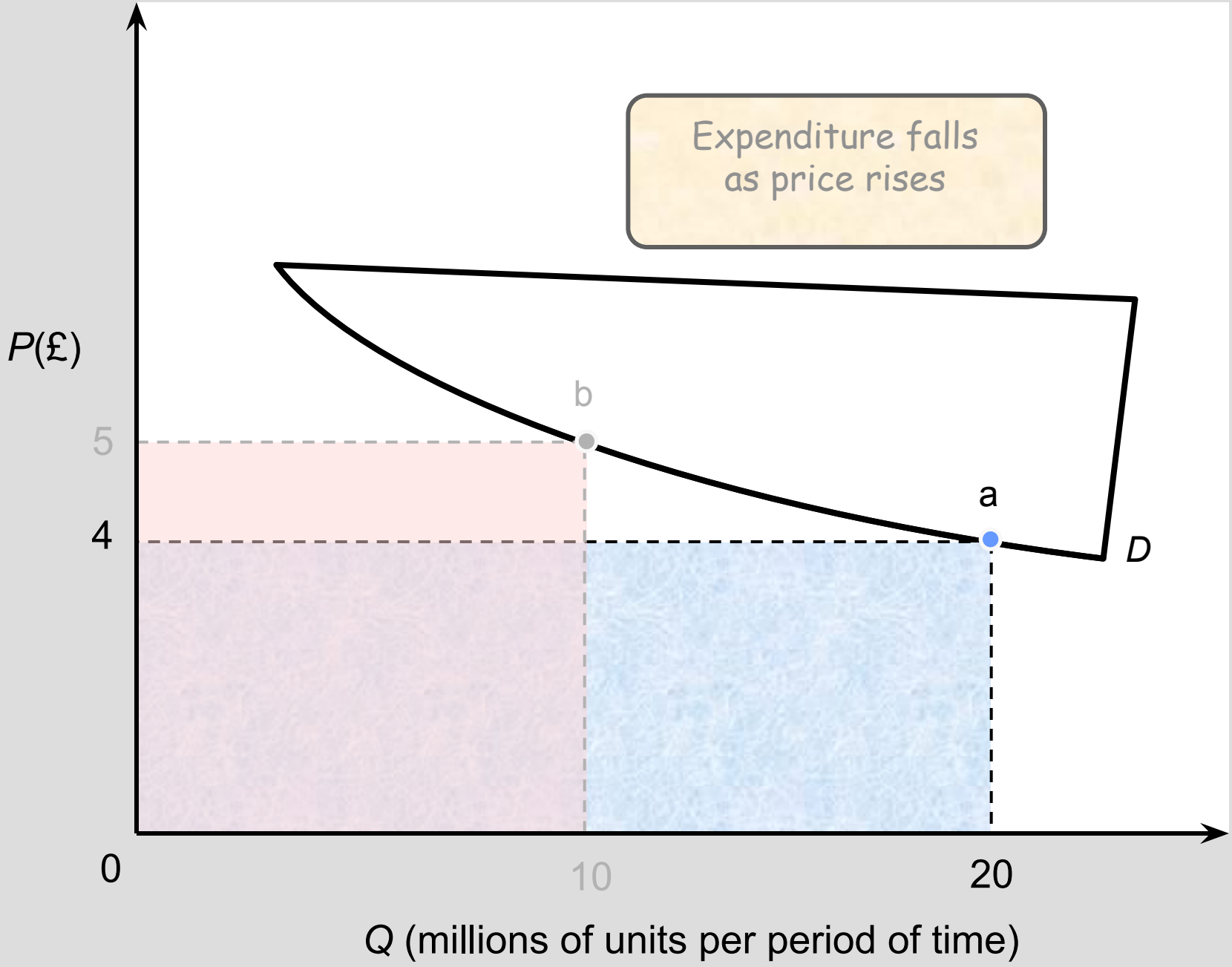
Example

- If consumers buy 3 million units (Q) at a price of £2 per unit (P)

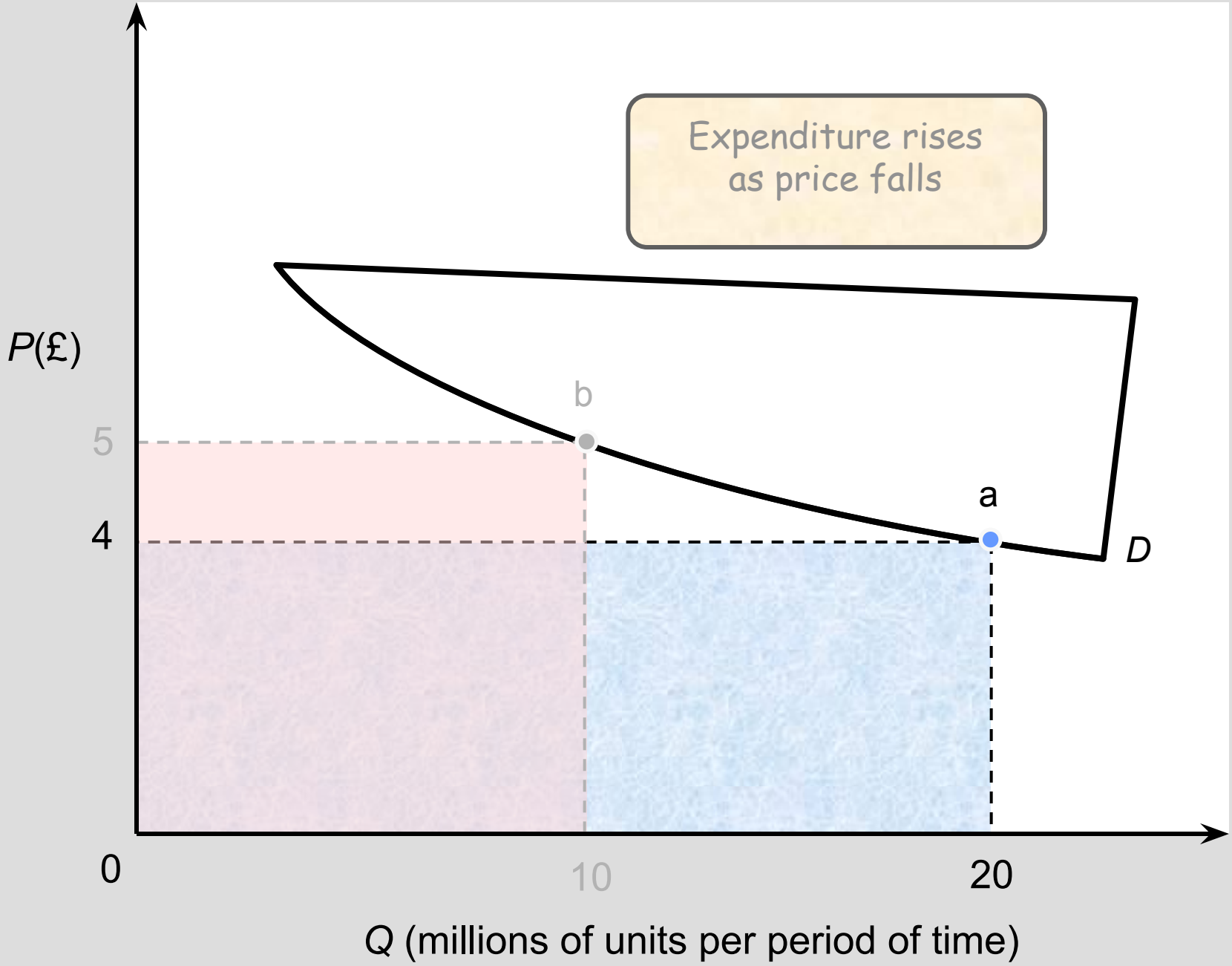
- Total is £6 million (TE)


- Total consumer expenditure will be the same as the *total revenue* (TR) received by firms from the sale of the product (before taxes and other deductions)

Total Expenditure



Elastic demand between two points





Warning

- Elasticity will generally vary along the length of the curve
- Common mistake to think of the elasticity of the whole curve
- 2 exceptions - special cases – 2 curves on one diagram

Figure 3.5 Different elasticities along different portions of a demand curve

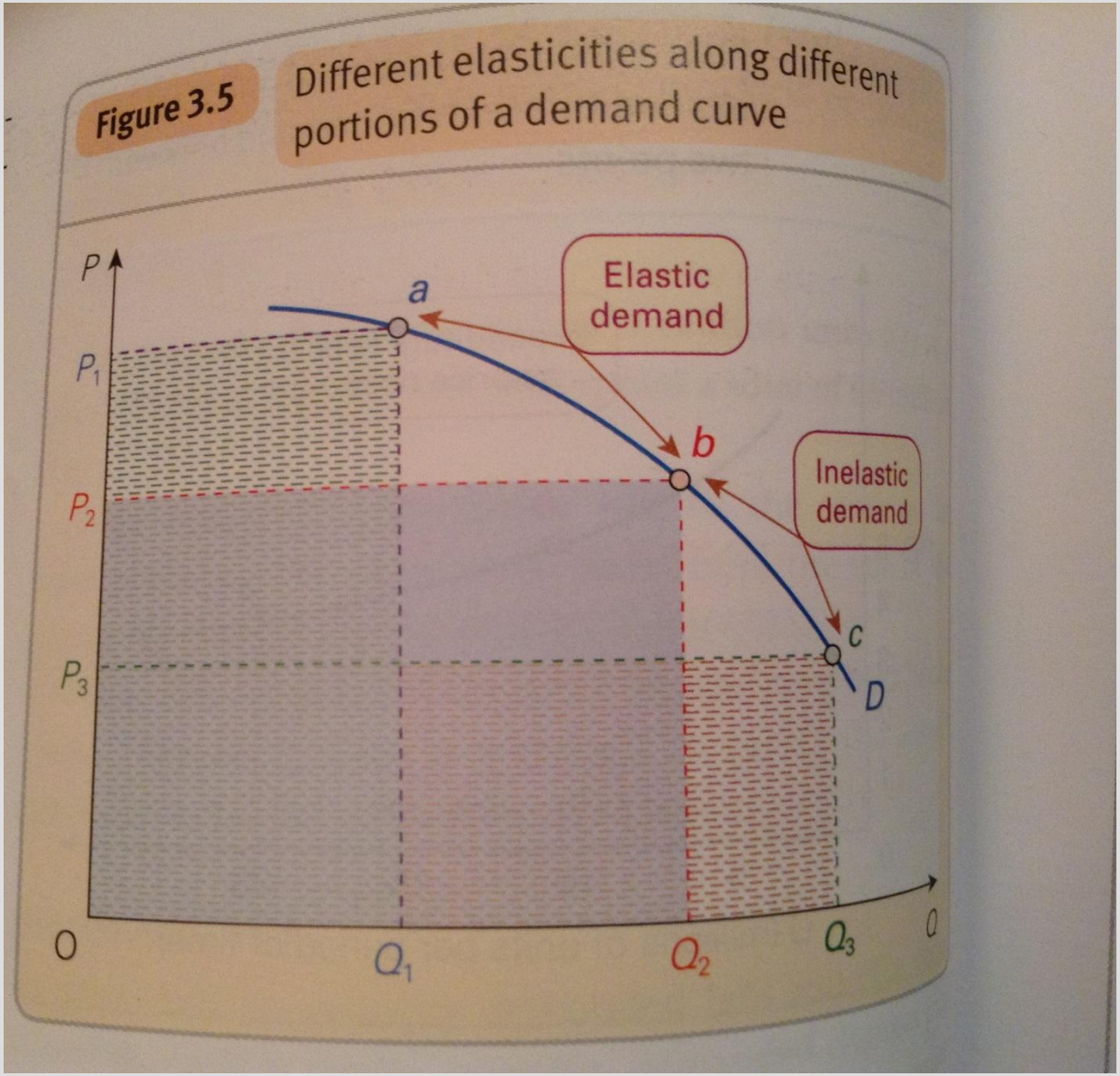
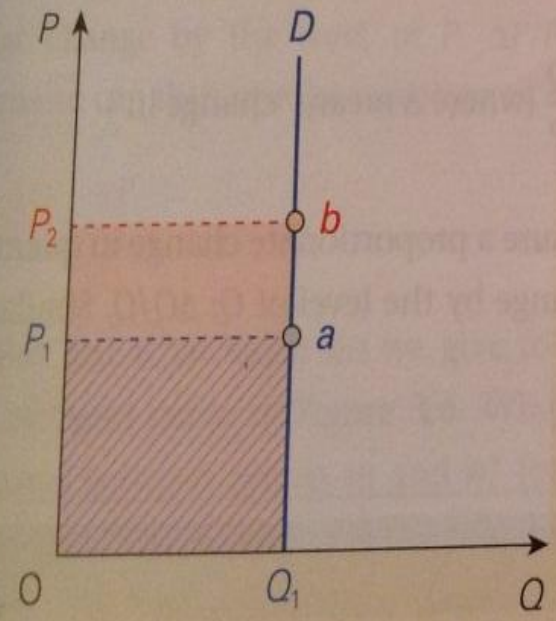
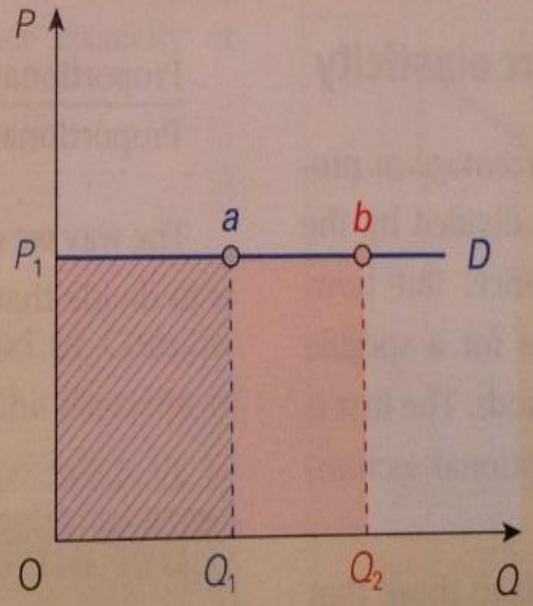


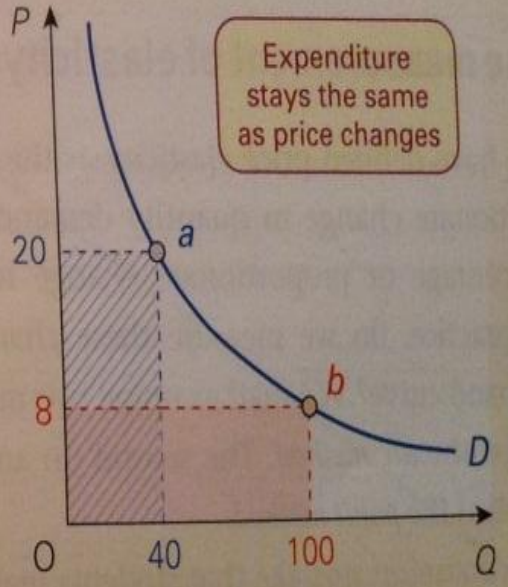
Figure 3.4 Price elasticity of demand: special cases



(a) Totally inelastic demand
($P\epsilon_D = 0$)



(b) Infinitely elastic demand
($P\epsilon_D = -\infty$)



(c) Unit elastic demand
($P\epsilon_D = -1$)



Review

- https://www.youtube.com/watch?v=-b7xlINQ-zg

- End of Session 1



Price Elasticity of Supply

- **Price elasticity of supply** is a measure used in economics to show the responsiveness, or elasticity, of the quantity supplied of a good or service to a change in its price.

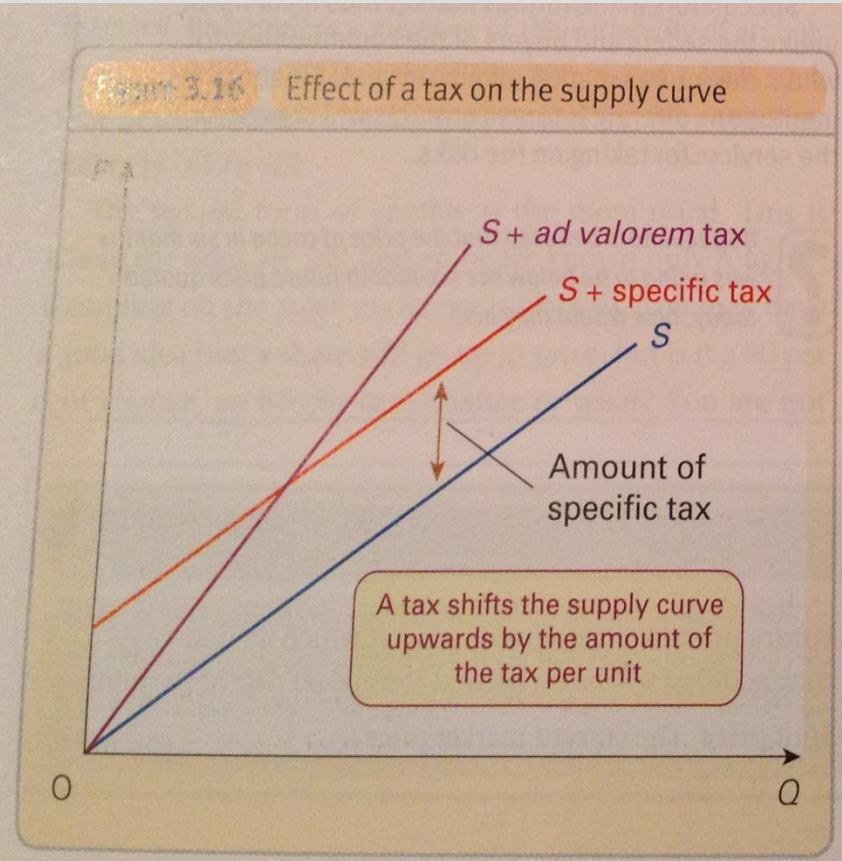
Price Elasticity of Supply

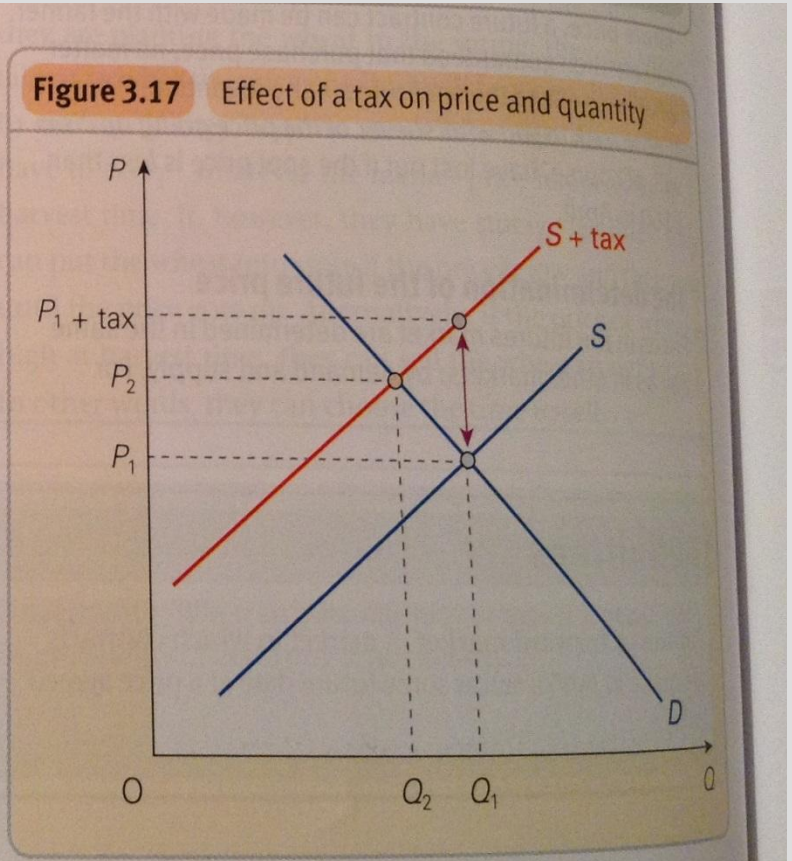
- Measuring price elasticity of supply
  $\%\Delta Q_S / \%\Delta P$
  - elastic and inelastic supply
- Determinants of price elasticity of supply
  - amount that costs rise as output increases
  - time period

The effect of imposing tax on goods

- Government intervention in the markets
- Indirect taxes, VAT, excise duties on cigarettes petrol & alcohol

- May be fixed per unit sold (specific tax)
- Asa % of the price at each stage of production (*Ad valorem* tax)





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Activities

- Work on case study *Ashes to Ashes* (pg 80 course text book)

- Research the CAP in small groups in the computer lab then report back to the class

- http://ec.europa.eu/avservices/video/player.cfm?ref=I101051
- http://ec.europa.eu/avservices/video/player.cfm?ref=I101081