

# 1.2.3. Elasticities (of demand)

**PED** The responsiveness of the quantity demanded of a good or service to a change in the price.

**Formula** 
$$PED = \frac{\text{Percentage Change in Quantity Demanded}}{\text{Percentage Change in Price}}$$

PED Value	Demand
0	Perfectly Inelastic
$0 > PED > -1$	Inelastic
-1	Unit Elastic
$-1 > PED > -\infty$	Elastic
$-\infty$	Perfectly Elastic

**Elastic Demand**

**PED Value < -1:**

$\Delta\%$  in QD  $\rightarrow$   $\Delta\%$  in P

**Inelastic Demand**

**PED Value > -1:**

$\Delta\%$  in P  $\rightarrow$   $\Delta\%$  in QD

Substitutability of the Good

Necessity of the Good

Short-run vs. Long-run

Proportion of Income

Specific Market Conditions

$\% \text{ Change} = \frac{\text{Difference}}{\text{Original}} * 100$

**Inelastic:**

If price goes up, revenues will go up

If price goes down, revenues will go down

**Elastic:**

If price goes up, revenues will go down

If price goes down, revenues will go up

When the price of a small car is £15,000, there are 100,000 people in the UK which wish to buy it. When the price falls to £10,000 the number wanting to buy the car rises to 200,000. What does this information tell you about the market for small cars in the UK?

**Income Elasticity of Demand (YED)**

The responsiveness of the quantity demanded of a good or service to a change in income.

$$YED = \frac{\Delta\% \text{ in Quantity Demanded}}{\Delta\% \text{ in Income}}$$

Inferior Good	Normal Good	Luxury Good
YED < 0	0 < YED	YED > 1
Income $\uparrow$	Income $\uparrow$	Income $\uparrow$
Demand $\downarrow$	Demand $\uparrow$	Demand $\uparrow$

**Cross Elasticity of Demand (XED)**

The responsiveness of the quantity demanded of a good or service to a change in the price of another good or service.

$$XED = \frac{\Delta\% \text{ in Quantity Demanded of Good B}}{\Delta\% \text{ in Price of Good A}}$$

Negative XED (-)	Positive XED (+)
Good A Price $\uparrow$	Good A Price $\uparrow$
Good B Demand $\downarrow$	Good B Demand $\uparrow$
<b>Complements</b>	<b>Substitutes</b>

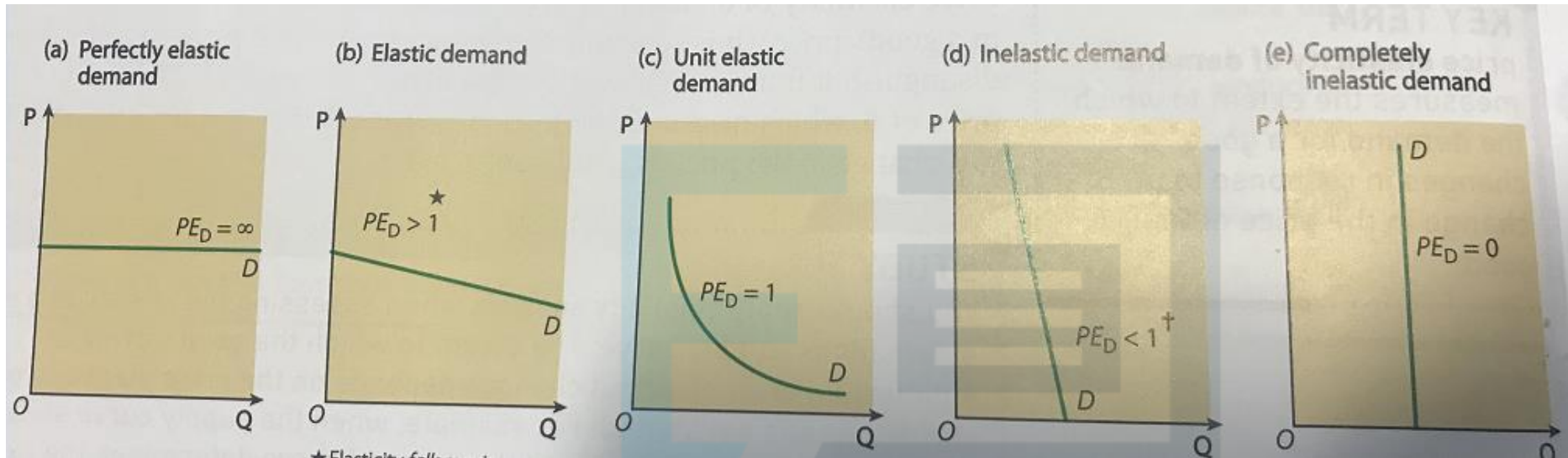
Game controller AND CD OR Soda can

The table below shows estimates of UK consumers' income elasticity of demand for holidays in four different countries.

Country	Income elasticity of demand
China	0.8
Peru	1.0
Italy	1.4
Spain	2.0

From the data it may be concluded that a 10% rise in real incomes would lead to

- A a fall in demand for holidays in China.
- B no change in demand for holidays in Peru.
- C a 14% increase in demand for holidays in Italy.
- D a 2% increase in demand for holidays in Spain.



## The market for beef

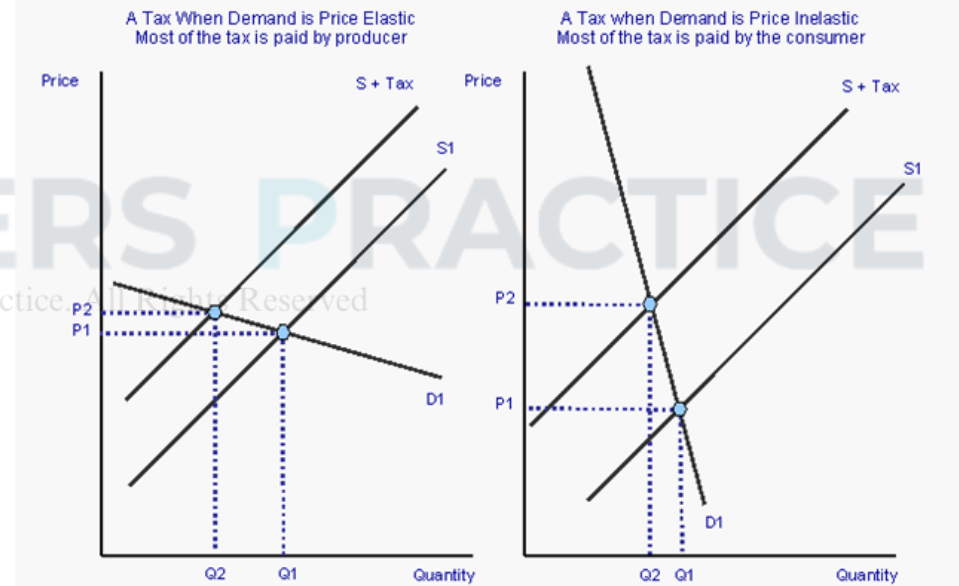
### Extract A

#### Boost to UK farmers

The horsemeat scandal of 2013 affected the demand for many processed meat products. Traces of horsemeat were discovered in products labelled as beef, manufactured by many overseas suppliers. With many beef products customers had little knowledge about where the beef came from. If the manufacturers knew, they were not always making this clear to customers.

As a result of the scandal, the proportion of domestically-sourced beef in British shops rose from 81% to 83% in 2013. Consequently, the prices farmers received for beef in the UK rose by 3%.

Another potential boost for UK farmers is demand from emerging markets. As the middle class grows in countries such as China, so does their demand for protein and dairy products. British meat and dairy products are seen as offering a stable and proven supply chain, unlike in China where baby milk has been found with traces of the plastic melamine. State-owned Chinese companies are approaching dairy farmers directly to secure millions of litres of UK milk.



(b) Assess the likely impact of a 3% increase in the price of UK beef on the market for lamb.

(10)