Income Elasticity of Demand (YED)

# Starter: Recap Question

**Instructions:** Test yourself with the below quick question

What affect does an increase in income have on the demand for ‘normal’ goods?

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What is meant by an inferior good?

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***Challenge:*** How is the upward sloping demand curve of a Giffen good explained?

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# Presentation 1 – Intro to YED

Complete the activities below so as to have a complete set of notes:

**Definition:** *Income Elasticity of Demand*

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*Equation:*

Unlike PED, YED can be negative or positive and the sign matters!

**Fill in in the gaps:** YED values and meanings

*If YED +ve*(e.g. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

Quantity demanded ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as real income rises. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ goods.

Increases in income lead to a ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shift in demand

*If YED +ve and >1*(e.g. ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

Quantity demanded increases by proportionately ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the ­­­­­­­­­­­­­­­­­­­­­rise in real income

­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ goods aka Superior Goods

So as incomes rise, the *proportion* of a consumer's income spent on that product will ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*If YED +ve and <1*(e.g. ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

Quantity demanded increases by proportionately­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the rise in real income

­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ goods

As income rises, the share or *proportion* of their budget on these products will ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*If YED –ve*(e.g. ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

Quantity demanded ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as real income rises. ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ goods.

Increase in income lead to a ­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shift in demand.

*N.B.*If YED = ±1, we say that a good has unitary income elasticity of demand, and can occur for either normal or inferior goods depending on +ve or –ve.

# Task: Income Elasticity of Demand Practice

**Instructions:**

* *Answer the below questions to test your understanding of YED*

**Questions**

What does income elasticity of demand (YED) measure?

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YED = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the signs and numerical values of YED for the below:

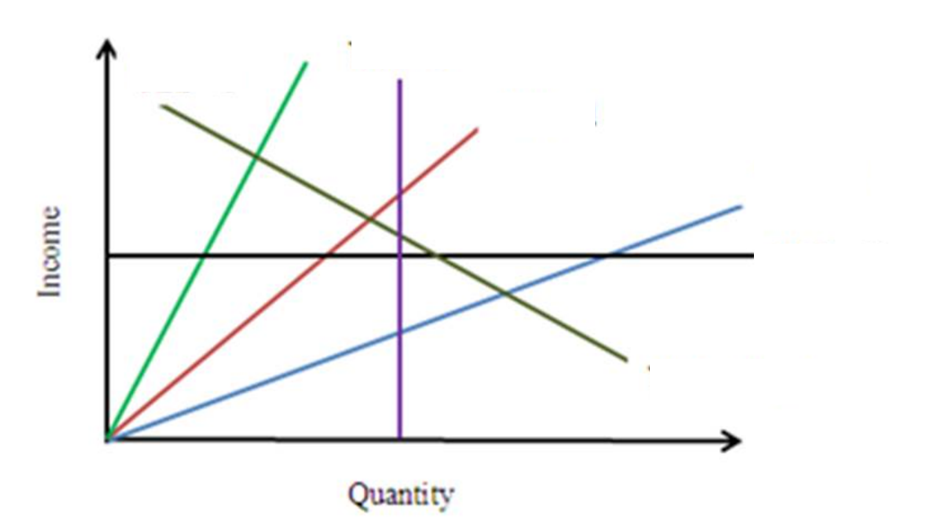
1. Normal Good:

2. Inferior Good:

3. Luxury G or S:

4. Necessity G or S:

Label the below curves shown on quantity and ***income*** axes:



A B

C

D

E

F

A: ……………………………………………………………………

B: ……………………………………………………………………

C: ……………………………………………………………………

D: ……………………………………………………………………

E: ……………………………………………………………………

F: ……………………………………………………………………

Calculate the YED for each of the following examples:

1. As the average UK income rose from £18,000 to 18,300, demand for digital cameras rose from 50,000 to 52,000 units per month.

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1. When UK income fell by 0.3%, the demand for holidays to Bognor Regis rose by 10%.

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1. As consumer incomes have doubled since 1990, the demand for air travel has tripled.

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1. For every 2% rise in consumer income, the demand for milk falls by 0.2%.

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1. For every 1% rise in consumer income, the demand for coffee rises from 100,000 to 100,500 units per year at the local supermarket.

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# Presentation 2 – Factors determining YED

Complete the activities below so as to have a complete set of notes:

**LCAs task:** Complete bullet points to explain how the below policies affect YED

*The nature of the good as a luxury or necessity*

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… therefore influencing YED

*The level of income of a consumer*

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… therefore influencing YED

*Examples:*

|  |  |  |
| --- | --- | --- |
| **Luxury** | **Necessity** | **Inferior** |
|  |  |  |
|  |  |  |

# Article task: Spam, Glorious Spam…

**Instructions:**

* Read, highlight, and annotate the article and answer the discussion questions

**Article:**

*Sales of the canned cooked meat Spam have hit a record high for the seventh year in a row, despite pandemic-related challenges.*

That helped Hormel, the company that makes the iconic brand, deliver record sales of $3.5bn (£2.65bn) in the three months to the end of October. The firm's boss said it will start work on expanding its range of Spam products next year. Hormel's shares rose by almost 6% in New York on Thursday.

"The Spam brand delivered its seventh consecutive year of record growth," Hormel's chief executive Jim Snee said on a conference call with investors. "We are also beginning work on another expansion for the Spam family of products scheduled to be operational in 2023," he added.

Hormel, which completed its takeover of the Planters peanut brand in June, saw sales rise by 19% to $11.4bn for the year as a whole. That came even as the company was faced with supply chain issues during the coronavirus pandemic. To help limit the impact of supply issues in the future Hormel said it has signed a new five-year contract for supplies of pork, the main ingredient in Spam.

**Asia popularity**

Outside the US, Spam has a large international market, especially in the Asia-Pacific region. It has been a household name in Hawaii since it was introduced in 1937. It can be found on menus across the islands, as Spam musubi - a sushi-like dish - Spam fried rice, and the popular breakfast - Spam, eggs, and rice.

In South Korea, it was introduced by the US army during the Korean War, when food was scarce. Today, Spam is so much a part of South Korean culture, that it is the staple ingredient in one of the country's favourite dishes: budae jjigae, or army stew.Tins of Spam are even given as presents for the Lunar New Year, sometimes presented in gift-boxes as part of special promotion for the holiday.

Hormel is based in the US state of Minnesota and operates in more than 80 countries worldwide.

**Questions**

What would you expect Spam’s YED to be in the UK? Why?

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What does the article suggest about the YED of Spam in other countries? Why?

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How can these two ideas be reconciled into explaining why Spams sales have increased consistently for much of the last decade?

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# Presentation 3 – Relevance of YED for firms

Complete the activities below so as to have a complete set of notes:

**Key Point:** *Firms need to know what the YED of their product is for their market in order to make preparations for the future.*

**Questions:** answer the questions to explain the relevance of YED to firms

*Standards of living:*As global standards of living increase we would expect to see an increase in demand for luxury goods and a movement away from inferior goods.

What will happen to the disposable income of consumers in high income countries?

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What will happen to their spending power and their spending on luxury goods and services?

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What will firms in these countries do to capitalise on this?

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*The economic cycle:* Firms will identify the state of the economy, e.g. recession, and produce goods and services to meet the demand of consumers.

What will happen to consumers’ incomes and hence spending patterns during recovery and boom periods?

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What will happen to consumers’ incomes and hence spending patterns during recession and slump periods?

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What businesses could be examples of those that do well in periods of poor economic conditions?

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# GreggsArticle task: Greggs and YED

**Instructions:**

* Read, highlight, and annotate the article and answer the discussion questions

**Article:**

*How Greggs are responding to changes in the economy after the recession.*

Greggs, the bakery chain did well out of the recession starting in 2008 with growing sales and profit.

Its 1500 outlets found a ready market with cash-strapped customers, many of whom were seeing their incomes decline.

Budget breakfasts and low-cost pastries, value sandwiches and a national network of stores helped it grow its sales at the expense of more upmarket competitors.

As the economy began to climb out of recession in 2013, its sales actually fell.

Greggs responded with a turnaround plan, concentrating on refurbishing outlets rather than opening new stores, to make them more attractive.

Menus were changed to include better coffee and more breakfast options to attract more upmarket customers who might otherwise buy from chains like Pret or even the supermarkets.

It also added ‘Balanced Choice’ a range of low-calorie sandwiches designed to appeal to better off customers.

**Questions:**

Why might the data suggest that many of Greggs’ products are inferior goods?

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Explain why some of these products would have negative YED

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Suggest why Greggs Changed its sales strategy when incomes began to rise as the economy emerged from the recession in 2013. In your answer explain the difference between inferior and normal goods.

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# Assignment: Income elasticity of demand

**Short-answer questions (Section A)**

1. Research conducted in the UK estimated that the income elasticity of demand for tobacco is -0.12.
   1. This estimate suggests that tobacco is:

A A normal good

B Income elastic in demand

C An inferior good

D Price inelastic in demand

[1]

* 1. The value of tobacco sales in the UK in 2013 was £12 billion. Calculate the value of UK tobacco sales following a 2% rise in income in 2013 (ceteris paribus). You are advised to show your working.

[4]

1. Income elasticity of demand for selected items in Sri Lanka and UK

|  |  |  |
| --- | --- | --- |
| **Product** | **Sri Lanka** | **UK** |
| Cereals e.g. rice | 0.46 | -0.02 |
| Fish | 0.62 | 0.36 |
| Tobacco | 1.02 | 0.57 |

It may be deduced from the data in the table that:

A The demand for tobacco is income inelastic in both countries

B The demand for fish is more responsive to changes in income in both countries than the demand for tobacco

C Cereals are a normal good in Sri Lanka but an inferior good in the UK

D A 10% increase in income would cause a more than 10% increase in demand for fish in both countries

[1]

1. UK elasticities of demand for air travel (2011 estimates)

|  |  |
| --- | --- |
| Price elasticity of demand | -0.6 |
| Income elasticity of demand | +1.3 |

It may be deduced from the data in the table that:

A Air travel is a normal good and demand for it is price inelastic

B A decrease in the price of air travel will increase total revenue

C Air travel is an inferior good and demand for it is price elastic

D An increase in income will cause the price of air travel to fall

[1]

1. UK Household Expenditure (Index numbers 1971 = 100)

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **1991** | **2005** | **% change** |
| Real household disposable income | 170 | 239 |  |
| Expenditure on food and soft drinks | 117 | 147 |  |

Using the data in the table, calculate the income elasticity of demand for food and soft drinks between 1991 and 2005. You may use the last column for your workings.

[4]

1. Estimates of UK income and price elasticity of demand for milk and cheese

|  |  |  |
| --- | --- | --- |
| **Dairy product** | **Income elasticity of demand** | **Price elasticity of demand** |
| Milk | 0.05 | -0.36 |
| Cheese | 0.23 | -0.35 |

From the information in the table it can be deduced that milk and cheese:

A Are inferior goods with a price inelastic demand

B Have a positive cross elasticity of demand

C Are inferior goods with a price elastic demand

D Are normal goods with a price inelastic demand

[1]

**Data response (Section B)**

**The motor vehicle market**

**Figure 1: UK new car sales**

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**Figure 2: Carbon dioxide emissions for new cars (grams per kilometre)**

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**Extract 1: Impact of the economic downturn on the UK car market**

The purchase of a car is the second largest expenditure item for consumers after buying a house. Not surprisingly, the economic downturn has caused a drastic fall in demand for new cars. New car sales fell by 21.8% in the first three months of 2009 in response to a 1% fall in real income over the same period.

Thousands of UK motor vehicle manufacturing jobs are likely to be lost this year. Nissan announced 1,200 redundancies in January and Toyota halved the number of shifts on its production lines. Several car companies have reduced wages, for example, Honda has reduced wage rates by 10%. Other companies have frozen pay to avoid compulsory redundancies. BMW and Ford closed their motor vehicle factories temporarily to reduce stockpiles of cars. General Motors, the owner of Vauxhall, may close its two UK plants in Luton and Ellesmere Port unless significant government grants or loans are provided. These factories are in areas of relatively high unemployment.

Source: Adapted from ‘Fears for 40,000 jobs in British car trade as Toyota goes into red’, by Leo Lewis and

Tom Bawden, *The Times*, 23rd December 2008 and SMMT fact sheet smmt.co.uk

**Extract 2: Government car scrappage scheme**

In the 2009 Budget, Chancellor Alistair Darling announced that motorists who scrap a car more than ten years old will receive a £2,000 grant when purchasing a new vehicle. The scheme follows similar moves by major European countries, including France and Germany.

However, the motor vehicle companies have to contribute £1,000 to the subsidy and the remaining £1,000 is paid by the government. The UK scheme will cost just £300 million and will end when the money runs out. By contrast, the German government has allocated £4.49 billion, boosting new car sales by 40%.

The car scrappage scheme is likely to boost the sale of smaller models such as the Toyota Yaris, but will be of little benefit to larger and more expensive vehicles such as Jaguar. The scheme has also been criticised for benefiting foreign manufacturers since eight out of ten cars bought in the UK are imported. However, the government claims that many of these imported cars have UK-made parts and the scheme will help UK car retailers.

The Society of Motor Manufacturers and Traders urged the government to provide more help for the industry by reducing fuel taxes and making it easier for consumers to get car loans.

Source: ‘Budget 2009: car industry welcomes scrappage scheme’, by Dan Milmo, *The Guardian*,

22 April 2009.

1. With reference to Extract 1, assess whether the demand for all cars is likely to be income elastic.

[10]