Cross Elasticity Demand (XED)

# Starter: Table task

**Instructions:** Complete the table for the below products.

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| --- | --- | --- |
| **Product** | **Substitute product** | **Complementary product** |
| NetflixNetflix isn&#39;t changing its logo, but has a new icon - The Verge |  |  |
| Cars |  |  |
| Hot Dogs |  |  |
| Cigarettes |  |  |
| One of your own: |  |  |

# Presentation 1– Intro to XED

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

**Definition:** *Cross-Elasticity of Demand*

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*Equation:*

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

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

*XED is positive* – e.g. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

An increase in the price of one product causes an \_\_\_\_\_\_\_\_\_\_\_\_\_ in the demand for the other product.

The two goods are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The higher the numerical value, i.e. greater than 1, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (e.g. \_\_\_\_\_\_\_\_\_\_\_\_).

*XED is Negative* – e.g. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

An increase in the price of one product causes a \_\_\_\_\_\_\_\_\_\_\_\_\_ in the demand for the other product.

The two goods are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The higher the negative numerical value, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (e.g. \_\_\_\_\_\_\_\_\_\_\_\_).

*If XED is 0*

An increase in the price of one product causes \_\_\_\_\_\_\_\_\_\_\_ in the demand for the other product.

The two goods are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Task: Cross Elasticity of Demand Practice

**Instructions:**

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

**Questions**

What does cross elasticity of demand (XED) measure?

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XED = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Calculate the XED for each of the following examples:

1. As the price of cars rose by 20%, demand for petrol fell by 80%.

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1. As the price of Shell petrol fell by 5%, the demand for BP petrol fell by 60%.

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1. When the price of inkjet printers fell by 50%, demand for ink cartridges doubled.

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1. When the price of unbranded inkjet refills fell by 50%, demand for HP ink cartridges fell by 40%.

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1. When the local supermarket put apple crumble on special offer for half-price, sales of ice-cream increased by 10%.

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# Presentation 2 –Relevance of XED for firms

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

**Key Point:** A firm’s best strategy in business often relies on what is happening in the markets around them. Knowing a product’s XED can help a firm react to changes and maximise profits.

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

*Substitutes:*A lower price for a rival product means fewer sales of your product.

What is the impact on a firm’s ability to increase its price if the product has lots of substitutes?

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How might firms with lots of substitutes look to increase sales?

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What will this do to XED and the impacts of rising prices?

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*Complements:*Firm’s might be able to increase their profits through encouraging complementary purchases as complements have joint demand.

What might firms look to do if there are lots of complementary products to their core product?

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Why might they do this?

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# Video task: CES 2021

**Instructions:**

* Watch the video at the below link and answer the discussion question

**Video:**

<https://www.youtube.com/watch?v=ouiPPIH1uXc>

**Question:**

*How does the latest technology impact on XED?*

|  |
| --- |
| Note Space: |

# Presentation 3 – Limitations of elasticity analysis

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

**Elaborate:** Elaborate on the below limitations of elasticity analysis

*1. Problems with inaccurate or incomplete data collection:*

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*E.g.*

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*2. Consumer sensitivity changes over time:*

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*E.g.*

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*3. Elasticity of demand varies by region / time:*

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*4. Not all businesses wish to maximise revenue:*

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*E.g.*

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# Assignment: Cross price elasticity of demand

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

1. The cross elasticity of demand for tea is likely to be:

A Negative following a change in the price of milk

B Positive following an increase in income since tea is an inferior good

C Negative following a change in the price of coffee

D Positive following a decrease in income since tea is a normal good

[1]

1. Which of the following goods are likely to have a positive cross elasticity of demand between them?

A Motor vehicles and rail travel

B Beef and leather

C Motor vehicles and petrol

D Beef and animal feed

[1]

1. The diagram shows the relationship between the price of the Apple iPhone and the demand for the RIM Blackberry phone.

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It can be deduced from the diagram that these two goods:

A Are price elastic in demand

B Have a negative cross elasticity of demand

C Have a zero cross elasticity of demand

D Are substitutes for each other

[1]

1. A café observed an increase in the demand for its coffee following a rise in the price of a cup of tea from £1.20 to £1.50. Assuming the cross price elasticity of demand for coffee with respect to a change in the price of tea is +3, calculate the percentage change in the demand for coffee.

 [3]

**Data response (1) (Section B)**

**The price of beef**

**Figure 1 The price of beef and chicken for fast food restaurants 2009 – 2010**

**Extract 1 Rising price of beef**

It is not a happy time in American fast food restaurants. Rising beef prices have reduced profit margins at the McDonalds, Burger King and Wendy chains. They have found it difficult to pass on higher beef prices to their customers through the sale of

burgers such as the ‘Big Mac’ and ‘Whopper’. Instead, the fast food restaurants have responded by promoting sales of chicken burgers and fish fillets. Beef prices have risen due to higher costs for cattle feed and severe drought conditions in Australia and New Zealand (the main suppliers of beef for American fast food restaurants). However, there is some good news. The fast food restaurants have benefited from the recession as consumers made savings by switching from eating at expensive

restaurants to cheaper burger bars.

(Source: © The Times ‘Increase in meat prices has burger lovers asking: where’s the beef?’, Alexandra Frean, 24th May 2010)

1. Using cross elasticity of demand, discuss the likely relationship between the price of beef and the demand for chicken and fish.

[8]