Open University Task

Economics in Context DD126

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Practice Modelling the Demand Curve

Learning Objective: **To consolidate your understanding of how the demand curve is modelled through practice.**

Task Description: We will look at the market for a specific good – in this case ice cream and try to understand how real-world events affect the demand for ice cream. First refresh your memory of demand by reading the revision summary page, then try and answer the questions on the example provided.

Contents:

Online Resources:

- www.erutledge.com/demand
  - — Understanding the demand curve
  - — Modelling the demand curve

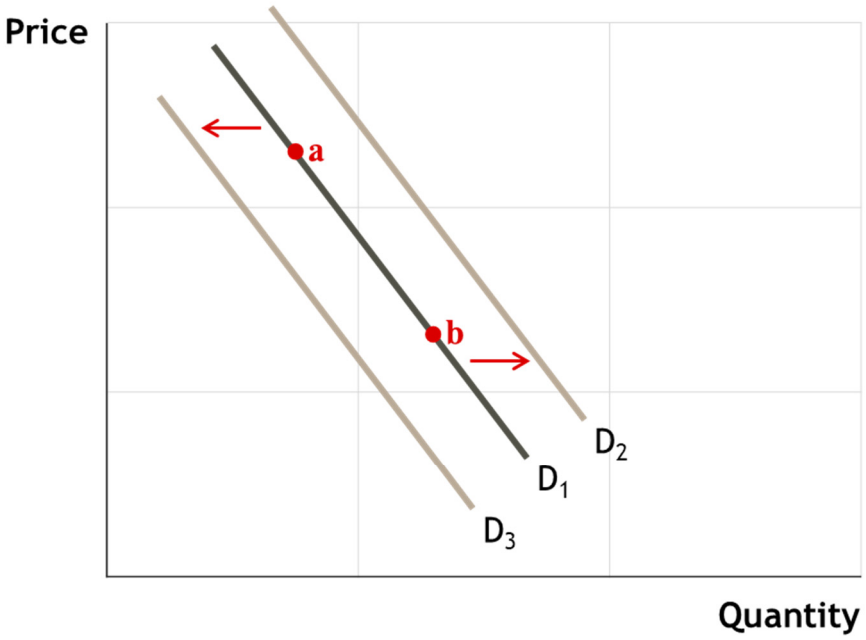
Modelling the Demand Curve – Key Revision Points

- **Demand** – the quantity of a good or service that consumers are willing *and able* to buy at a given price in a given time.
- **Demand curve** – a graphical representation showing the relationship between the price of a good (or service) and the quantity demanded. Price is plotted on the Y axis (vertical) and quantity on the x axis (horizontal).
- The **negative slope** of the demand curve reflects the inverse relationship between price and quantity demanded of the good.
- **Ceteris paribus** (all other things being equal), the quantity demanded of a good increases when the price of the good decreases and vice versa (may be referred to as "the law of demand").
- The **Law of Demand** is explained by the substitution effect and the income effect of price changes on the quantity demanded:
    - The **substitution effect** of a price increase in good x is that where substitutes are available consumers will switch to buying those because they are relatively cheaper compared to good x and therefore quantity demanded of good x decreases.
    - The **income effect** of a price increase in good x is that with a fixed amount of income consumers now find that they can afford less of good X and therefore quantity demanded of good X decreases.
- **A change in the price** of the good causes a movement along (up or down) the demand curve.
- **Shifts in the demand curve** are caused by factors or events other than a change in price. We can summarise these:
    - **Income of consumers**
        - **Normal good** – rising income has positive effect on demand
        - **Inferior good** – rising income has negative effect on demand
    - **Preferences of consumers** – increased preference increases demand
    - **Price of other goods and services** (substitutes and complements).
        - Price of a **substitute** good Y increases - then demand for good X increases (positive relationship) e.g. Coca-Cola and Pepsi
        - Price of a **complement** good Z increases – then demand for good X decreases (negative relationship) e.g., Tennis rackets and tennis balls

A real-world example – market demand for ice cream

The UK ice cream production industry generates revenues of approximately half a billion pounds annually and employs more than 3,500 people in the UK, according to Industry Research specialists IBISWorld. The industry is dominated by large brands such as Unilever and R&R who account for approximately four fifths of industry revenue (IBISWorld, 2020). According to research, market demand is particularly susceptible to changes in weather conditions (Johnes, 2018), disposable income levels and consumer diet trends (IBISWorld, 2020) and needless to say, price too (Davis, Blayney, Yen, & Cooper, 2009).

The diagram below shows the market demand curve for ice creams (D1).



Starting on demand curve D_1, explain what happens to demand as a result of the market events below: [1]

*Q1) The price of ice creams decreases from point **a** to point **b** on D_1. What happens to the quantity of ice creams demanded?*

Q2) The economy expands and consumers see an increase in their income.

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Q3) Consumers become more health conscious and shift their preferences towards healthier alternatives. What happens to demand?

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Q4) The summer is very hot, what happens to demand for ice creams?

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Q5) The price of ice lollies – a substitute good – decreases.

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Source: https://www.mackies.co.uk/

References and Notes

Davis, C. G., Blayney, D. P., Yen, S. T., & Cooper, J. (2009). An analysis of at-home demand for ice cream in the United States. *Journal of Dairy Science, 92*(12), 6210–6216. doi:https://doi.org/10.3168/jds.2009-2536

IBISWorld (2020). Ice Cream Production in the UK – Market Research Report. Retrieved, https://www.ibisworld.com/united-kingdom/market-research-reports/ice-cream-production-industry/

Johnes, G. (2018, July 30). More ice cream, less sticky toffee pudding: the subtle effect of the weather on the UK economy. *LSE British Politics and Policy* [London School of Economics and Political Science]. Retrieved, https://blogs.lse.ac.uk/politicsandpolicy/heatwave-impact-economy/

Notes

[1] For each separate event assume 'ceteris paribus' (all other things being equal). It is worth noting that in the real world all other factors – variables/considerations – will not be equal, but for modelling purposes we must assume them to be.

Appendix A: Answer Key

Q1) The price of ice creams decreases from point A to point B on D1. What happens to the quantity of ice creams demanded?

The quantity demanded of ice cream increases when price falls and there is a movement along the demand curve.

Q2) The economy expands and consumers see an increase in their income.

There would be an increase in demand causing a shift from D1 to D2

Q3) Consumers are encouraged through health campaigns to be healthier and shift their preferences towards healthier alternatives. What happens to demand?

Demand for ice cream decreases and the demand curve shifts from D1 to D3 because consumers have shifted preference from eating ice cream towards a healthier alternative e.g. frozen yoghurt.

Q4) The summer is very hot, what happens to demand for ice creams?

The demand curve would shift outwards representing an increase in demand for ice creams at all prices this is shown on the graph as a movement from D1 to D2. Research has shown that a 1% increase in temperature leads to an increase in the demand for ice cream of around 1.2% (see: Johnes, 2018)

Q5) The price of ice lollies – a substitute good – decreases.

Consumers shift towards buying the cheaper substitute good and this would decrease demand for ice creams, causing a shift from D1 to D3.