

ECC1000: PRINCIPLES OF MICROECONOMICS

Questions for Tutorial Week 4

In addition to the following problems, it is highly recommended that you work on all the problems at the end of Chapter 5. Questions with * are more important than the rest, which will be covered during the tutorial as much as possible.

Chapter 5, Problem 1

For each of the following pairs of goods, which good would you expect to have more elastic demand and why?

- required textbooks or mystery novels
- Beethoven recordings or classical music recordings in general
- bus trips during the next six months or bus trips during the next five years
- lemonade or water

Chapter 5, Problem 2* (use the mid-point method to calculate elasticity)

Suppose that business travellers and holiday-makers have the following demand for airline tickets from Sydney to Melbourne:

Price (\$)	Quantity demanded (business travellers)	Quantity demanded (holiday-makers)
150	2100	1000
200	2000	800
250	1900	600
300	1800	400

- As the price of tickets rises from \$200 to \$250, what is the price elasticity of demand for (i) business travellers and (ii) holiday-makers?
- Why might holiday-makers have a different elasticity than business travellers?

Chapter 5, Problem 6 (use the point method with \$1.25 as the base price)

The New York Times (17 February 1996) reported that subway use declined after a fare increase: 'There were nearly four million fewer riders in December 1995, the first full month after the price of a token increased 25 cents to \$1.50, than in the previous December, a 4.3 per cent decline.'

- Use these data to estimate the price elasticity of demand for subway rides.
- According to your estimate, what happens to the revenue when the fare rises?
- Why might your estimate of the elasticity be unreliable?

Chapter 5, Problem 9* (use the point method with \$8 as the base price)

Consider public policy aimed at smoking.

- a. Studies indicate that the price elasticity of demand for cigarettes is about 0.4. If a packet of cigarettes currently costs \$8 and the government wants to reduce smoking by 20 per cent, by how much should it increase the price?
- b. If the government permanently increases the price of cigarettes, will the policy have a larger effect on smoking one year from now or five years from now?
- c. Studies also find that teenagers have a higher price elasticity than do adults. Why might this be true?

Chapter 5, Problem 12

In the 1980s, the government imposed a sales tax on the purchase of luxury cars. The revenue collected from the tax equals the tax rate multiplied by total spending on such cars. In 2008 the government increased the tax rate on luxury cars. Would such an increase necessarily raise tax revenue? Explain.

Extra Question 1* (What's good for the dairy industry can be bad for farmers!)

Bovine growth hormone (BGH) has been shown to increase the milk production by 10 to 20 percent, and is produced by several manufacturers such as Monsanto, Upjohn, etc. Numerous lab tests have shown that the hormone-treated milk is the same as non-hormone-treated milk in every respect. For the purpose of this question, assume that consumers cannot distinguish between the hormone-treated milk and non-hormone treated milk. Using demand-supply diagrams, answer the following questions.

- a. How would the introduction of BGH affect the dairy market?
- b. Despite the productivity increase, dairy farmers are opposed to the use of BGH. Why?

Extra Question 2*

(For more details, read the article linked on Moodle: week 3, 'Harry Clarke - Tobacco excise and elasticity'.)

Tobacco products are usually believed to have inelastic demands with price elasticity around 0.4. Various governments around the world levy taxes on cigarettes and raise significant tax revenue. These taxes are "specific taxes" that are levied per stick or per cigarette. As we learned from class, the price elasticity of 0.4 implies that higher prices due to higher taxes would reduce consumption in a smaller proportion, which leads to larger sales revenue as well as excise tax revenue.

Cigarette prices have increased strongly in Australia in recent years because of successive excise tax increases. The Australian Bureau of Statistics reports sharp declines in cigarette consumption in Australia since mid-2014. And excise revenue is expected to fall by 2.3% from 2015 to 2016 and by a further 4.7% from 2016-2017.

How can we reconcile the statements in the two paragraphs above?