Worked Solutions 2

Lectures 3 and 4

Question	Lecture
1.	L3
2.	L3
3.	L3
4.	L3
5.	L3
6.	L4
7.	L4
8.	L4
9.	L4
10.	L4
11.	L3
12.	L3
13.	L3
14.	from Reading Pack

Exercise 1

Give examples of markets that in your experience conform closely to the model of perfect competition. Give some examples of markets that are not perfectly competitive. Highlight the reasons that these latter situations deviate from perfect competition.

Answers

Markets that are close to the perfectly competitive model include some agricultural and commodity markets, where many small suppliers service many small customers. Markets that deviate markedly from the perfectly competitive case include monopolies (where a single seller exists) or monopsonies (where a single buyer exists). Less extreme situations occur in markets where there are only a few sellers or a few buyers, or where goods or services are well differentiated, say, by branding.

Other deviations from perfect competition occur when information in markets is not shared equally between buyer and seller. For example, a second-hand car sales person may have better information about the quality of a car than a potential purchaser. Such a market is not perfectly competitive.

Exercise 2

What are the main service flows yielded by purchasing the following goods or services? What are the major user costs?

1. A Mitsubishi Pajero.
2. An investment in an unlisted mutual fund.
3. Management consulting services.
4. A personal computer.
5. A portrait by Sir William Dobell.

Answers

1. Service flows: Transportation services for people and goods, on-road and off-road. Perhaps status from owning a 'Toorak Tractor' and projecting an 'outdoors' image. User costs: petrol, servicing, registration, capital costs and depreciation, insurance costs.
2. Service flows: Quality portfolio decisions that rely on specialised expertise but which have a low time cost: User costs: fees, search costs to select adviser, risks of poor performance or problems of guaranteeing security of funds lodged, costs of inspecting performance.

3. Service flows. Information yielded with a low time cost. Specialised expertise provided without an ongoing employment commitment.

Exercise 3

How will an individual's demand for bananas change if she learns she might have an allergy to them she did not previously suspect? Would you expect such information to influence the market demand for bananas? Explain?

Answer

In this case, such new information will likely reduce her demand for bananas at any price: her demand curve for bananas would shift to the left on our figure. If she has a rare allergy, or if other buyers don't know about this new property of bananas, then the market demand will not shift. But if the allergy is common and other buyers learn about it too, then the market demand is likely to shift to the left as well.

Exercise 4

Which of the following could shift the demand curve for bread to the left?

1. an increase in the price of bread
2. a decrease in income
3. a decrease in the price of butter
4. an increase in the price of rice
5. an increase in the immigration intake
6. reduced marketing effort.

Answers

Only 2. Since a decrease in incomes would reduce the demand for bread at any particular price (assuming bread is not an inferior good). 1 is a movement along the demand curve for bread. Both 3 and 4 shift the demand curve for bread to the right

Exercise 5

1. Manufacturing faults have recently been revealed to have occurred in the production of past versions of Mitsubishi's Pajero four-wheel drive vehicle. How would you expect such revelations to affect demand for new and second-hand Pajero vehicles?

2. If the price of a Pajero vehicle increases, how would you expect this to influence the demand for Pajero vehicles?

3. The price of oil has just moved to above US$30 per barrel. How would you expect this price increase to affect the demand for Pajero vehicles?

4. Suppose the economy continues to grow strongly over the next year. How will this impact on the demand for Pajero vehicles?

5. Domestic airfares fell dramatically in Australia due to the arrival of Virgin Blue. How will this fall in the cost of domestic air travel influence the demand for petrol and the demand for Pajero vehicles?

Answers

1. The demand for second-hand vehicles that have been revealed to have the fault should decline. This might have two effects on demands for other models. Some customers might assume (perhaps wrongly) that other models might be similarly subject to fault. The assumption might be that Mitsubishi has proved itself to be careless in quality control of its vehicles. This will reduce demand for other vehicles. On the other hand those who wish to buy a Pajero might substitute away from the suspect model towards new or second-hand models that are known not to be subject to fault.

2. Not at all. A price change involves a shift along the whose demand curve. There is no change in demand.

3. Particularly strong for vehicles with high petrol consumption. This should have a significant effect on the demand for Pajeros.

4. Four-wheel drives are bought by those on high incomes, whose demand is relatively income elastic. Sustained income growth should boost demand for Pajeros.

5. This is complex. If domestic airfares fall, the demand for domestic air travel should increase and reduce demands for other modes of interstate travel. If Pajeros are used for such travel, there should be some effect on demand for this type of use. But if the main uses of such vehicles is for local trips, or for outback travel, there might be at best only weak effects on demand of reduced domestic airfares. There might be some effect on demands through the 'fly and hire' market segment.

Exercise 6

Take a qualitative guess on the market-level price elasticities that are plausible for each of the following goods and describe the character of the market and product that leads you to this view:

- a video camera with Zeiss lenses
- pharmaceuticals
- car repairs following an accident
- salt.

Answers

- Having the famous **Zeiss lens** imparts some inelasticity, but there are many other video camera and the cost is a large part of most people's budgets. Intuition is that demand will be quite elastic.

- **Pharmaceuticals.** Drugs similar to insulin are price inelastic, while drugs with more substitutes will be more elastic. If the cost of drugs is government subsidised or covered by health insurance, elasticity will be lower. If consumers are poorly informed of availability of substitutes, this makes demands more inelastic.

- **Car repairs.** If repairs are covered by insurance demands, if there are high transaction costs of getting quotes on a broken down car, or if the consumer has poor information about the need for repairs, demands will tend to be price inelastic. On the other hand, the wide availability of repair shops makes demands more elastic particularly for uninsured vehicles.

- **Salt.** Demand will be inelastic. Costs only a small part of the budget and there are few substitutes.

Exercise 7

True or False (Explain your answer): if the price elasticity of demand for each of several brands of cigarettes taken separately is 4.5, then the price elasticity of demand for the several brands taken together is also 4.5.

Answer

False. If the price of one brand rises, say by 1%, then a price elastic of demand of 4.5 suggests that demand for that brand will fall by 4.5%. (For own-price elasticity, often drop the minus sign.) Consumers of that brand switch to other brands whose prices remain unchanged, and the demand for the first brand is elastic. But if all brands' prices rise by 1%, there are no close substitutes for cigarettes as a whole, and (since nicotine is highly addictive) it is likely that demand for all cigarettes will fall by less than 1% (inelastic demand).

Exercise 8

A firm produces a new large-screen TV set that uses an innovative image reception technology, providing above-average picture quality at a price comparable to other models. Its cost is around the industry average. As a consultant, write out a brief note to the managing director of this firm setting out how elasticity information could be used to determine a desirable pricing strategy relative to competitor firms.

Answers

Here the firm's product provides a benefit rather than a cost advantage. If demand is determined to be very price elastic, then raising price will lose much business. Probably better to price at parity with other suppliers and to allow the benefit advantage to drive a share strategy. If demand were price inelastic, then boosting price a lot to reflect market share would not lose much business but would add much to the bottom line. Probably better to then pursue a margin strategy.

Such appliances are relatively expensive, comparison shopping is easy and picture quality is reasonable for many competing models. Ignoring brand loyalty, one might expect demand to be relatively elastic, and go for a share strategy.

Exercise 9

The Urban Transit Authority receives the following two pieces of expert advice:

> 'You should cut rail fares in order to encourage greater use. Raising fares will mean fewer customers and lower revenue.'
>
> 'You cannot afford to cut fares as this will reduce your revenues'.

1. What do each of these pieces of advice assume about the elasticity of demand for rail travel?
2. How might an economist seek to resolve the conflict of opinion?
3. What factors determine the elasticity of demand for rail travel?

Answers

1. If price elasticity of demand for rail travel is greater than unity (relatively elastic), then the first advice is correct (*ceteris paribus*).

   If price elasticity of demand for rail travel is less than unity (relatively inelastic), then the second advice is correct (*ceteris paribus*).

2. We require an estimate of the price-elasticity of demand for rail travel. One method of obtaining such an estimate is to interview rail travellers about their intentions if fares were raised. Since travellers have an interest in the result, the responses may be unreliable. Respondents are likely to overstate a negative reaction to a price rise, in order to discourage it. An economist would most likely seek to estimate elasticity of demand by statistical methods. This involves constructing an economic model of demand (a hypothesised relationship between the quantity demanded and relevant causal variables such as price), and estimating the parameters of this relationship using statistical data (usually observations over time) on the relevant variables from actual market data. The main problem is one of identifying the particular effect of changes in price on demand, when other factors also change between observations.

3. The price elasticity of demand for rail travel will depend on the availability of substitutes, alternative forms of transport for the commuters, that determines the substitution effect, and the significance of travel in consumers' incomes (for the income effect). A priori, we might expect demand to be relatively price-inelastic, as substitution for particular journeys may be limited, and rail travel has something of the properties of an inferior good. Poor people, although significantly hurt by higher rail fares, may have to reduce expenditure on other goods rather than rail travel if they have no alternative travel means.

Exercise 10

1. How elastic is the supply of goods and services in the market in which your firm operates in the short run and long run? What are the main factors likely to shift supply in your industry over the next few years?

2. Illustrate the effects on the short-run supply curve of (a) a price increase; (b) an increase in the firm's labour costs; (c) a perception that market conditions next period will be depressed; and (d) the exit of firms from an industry.

Answer

This answer will depend on the specific industry. Let me describe my industry, the market for business educational services:

1. Teaching premises can be rented at short notice and course preparation costs are almost fixed. There are short-run constraints on the ability to employ skilled instructors. An industry-wide surge in demand is likely to run into supply constraints. The main factors shifting supply are likely to be changed demographics, a stock effect of having increased numbers of trained managers and innovations due to distance learning.

2. (a) No effect – a price increase moves a firm up its supply curve. (b) Some effect but the fixed costs of education are important, so changes in labour costs will not have strong supply effects. (c) Probably no effects – variable teaching inputs can be trimmed next period. (d) Strong effects since the market is fairly concentrated.

Exercise 11

'If the demand for petrol rises (perhaps because more people own cars), this will tend to raise the price of petrol. But this contradicts the proposition that there is an inverse relationship between demand and price [the law of Demand]. Demand curves do not slope upwards.'

Expose the fallacy in this argument.

Answers

Don't confuse movement **along** the demand curve as price changes (*ceteris paribus*), with shifts of the demand curve. Here, the demand for petrol rises at all prices (the demand curve shifts to the right). With an upwards-sloping, unshifting supply curve, this increase in demand will result in a higher equilibrium price. But the (shifted) demand curve is still downwards-sloping [the law of Demand].

Exercise 12

Analyse the implications of the following comparative static changes in the competitive market equilibrium model. In each case provide a written rationale for the results you describe.

1. A fall in the price of an input such as wages.
2. A fall in the price of a substitute commodity.

Answers

1. A fall in the price of an input shifts the supply curve to the right. Equilibrium quantities sold should rise and equilibrium prices charged should fall.

2. A fall in the price of a substitute shifts demand to the right. Equilibrium quantity sold and the equilibrium price should both rise.

Exercise 13

Assume the demand and supply schedules for bottles of fresh fruit juice are as in Table 2.6, where price is measured as cents per bottle and quantities demanded and supplied are measured in 1,000 bottles per week.

Table 2.6

Price	Quantity demanded	Quantity suppled
40	400	0
80	360	60
120	320	120
160	280	180
200	240	240
240	200	280
280	160	320
320	120	360
360	80	400

a. What is the equilibrium price of a juice bottle?

b. What is the market equilibrium quantity?

Suppose that the supply of juice at each price decreases to one-half of the amount shown in the supply schedule because contamination problems force the closure of a number of producer factories.

c. What is the new equilibrium quantity of bottles of juice?

d. How would the change in supply be represented in a diagrammatic model?

As the contaminated factories begin to resolve their problems and gradually resume production, what will happen to:

e. The price of juice bottles?

f. The quantity of bottles purchased?

g. The demand curve for bottles of juice?

h. The supply curve for bottles of juice?

Answers

a. $2 per bottle.

b. 240,000 bottles per week.

c. 160,000 bottles per week.

d. Supply Curve shifts to the left.

e. The price begins to fall from $2.80 back towards the original price.

f. The quantity of bottles purchased begins to increase (along the demand curve) as the price falls.

g. The demand curve is unaffected, there is a movement along the given demand curve.

h. The supply curve shifts right.

Exercise 14

One of the 'geek' heroes in Michael Lewis' book *Liar's poker* was the trader Alexander, who worked for Salomon Brothers. After the Chernobyl disaster he bought oil and potato futures. Comment on the rationality of this move using general equilibrium thinking. How would secondary effects contribute to the viability of the nuclear industry post-Chernobyl?

Answer

The case for nuclear-powered electricity generation has been a hotly contested political debate in most countries. The Chernobyl disaster could have been expected to (and did) shift public opinion firmly against nuclear power. It would favour the construction of more oil-powered electricity generation and lead to increased oil prices.

The potato crop was seriously affected by the disaster, so future potato prices could be expected to rise. The secondary effects of the hike in oil prices would be to partially restore the viability of the nuclear power option. As oil prices rise due to the disaster, the economic case for using nuclear power strengthens.