Case study 1.3 The benefits and costs of a university degree

Summary

This case study describes how the principle for optimal decision-making, to take an action where the addition to total benefit (marginal benefit) outweighs the addition to total cost (marginal cost), can be applied to the decision that a student who has completed high school makes about whether to attend university.

Suggested answers

1 You own an ice-cream stall at Sandy Beach. You can sell each ice-cream for $2. With extra opening hours for your stall, you believe that you can increase your sales as shown in the table below. For each hour the stall is open, your opportunity cost is $15. For how many hours should you open your stall?

|  |  |
| --- | --- |
| Hours of opening | Total sales of ice creams |
| 0 | 0 |
| 1 | 20 |
| 2 | 35 |
| 3 | 45 |
| 4 | 50 |
| 5 | 50 |

It is possible to use this information to calculate MB and MC:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Hours of opening | Total sales of ice creams | Total revenue ($) | MB ($) | MC ($) |
| 0 | 0 |  |  |  |
| 1 | 20 | 40 | 40 | 15 |
| 2 | 35 | 70 | 30 | 15 |
| 3 | 45 | 90 | 20 | 15 |
| 4 | 50 | 100 | 10 | 15 |
| 5 | 50 | 100 | 0 | 15 |

Hence the optimal number of opening hours is 3.

2 Suppose you own a small funds-management company. You are trying to decide whether to hire an extra employee. How should you make this decision? What factors should you take into account?

Using the principle for making an optimal decision would involve comparing the MB and MC of hiring an extra employee. The MB would be the addition to your company’s total revenue from having the extra employee. The MC would be the addition to your company’s total cost – including components such as extra wage costs, costs of your time that must be spent in managing the employee, and costs of any equipment or training for the new employee that cannot be recouped if that employee was to cease working with your company.

3 An article in The Economist (2017) described how theft has declined in most rich countries since the 1990s. Explanations suggested included the ageing population and better policing. The article also noted that criminals appear to respond to the changing value of goods – with a 10 per cent increase in the price of a good being associated on average with a 3.5 per cent rise in the likelihood of it being stolen.

Use the economic theory of decision making to explain:

a Why an ageing population and better policing might be associated with a decrease in theft?

Age may reduce the likelihood of being able to undertake a theft successfully, which represents a decrease in benefit. Or it may increase the cost, for example, greater psychological costs of spending time in prison.

Better policing increases the probably of being caught while attempting to steal an item, which raises the costs of the activity.

b Why the likelihood of an item being stolen would be related to its price?

An increase in the price of an item increases the benefit of stealing it (by increasing either for the use value or resale value the criminal will obtain). Because an increase in price is therefore associated with an increase in the benefit compared to cost of theft, we would expect to observe a higher incidence of theft of more expensive items. (Of course, this may be counter-acted to some degree where the owners of more expensive items have extra security, thereby also raising the cost of theft.)