

Chapter 9

Businesses: their costs, revenue and profit

Billionaire Warren Buffett, who has just written-down his investment in USAir, believes it is far from certain the deeply troubled US airline will succeed in reaching a much needed cost reducing agreement with its labour unions.

USAir . . . has been talking to its unions for months about how to slash its labour costs. Wall Street analysts believe an agreement is essential if USAir is to avoid . . . bankruptcy.

(Daily Telegraph, 21 March 1995)

The meaning of costs

As with many other words, economists use the term 'costs' in a very specific way. The cost of production, for any business, is what could have been done with the resources used if they had been used differently - i.e. the opportunity cost. This suggests that the word 'cost' has a different meaning in economics from that understood by accountants.

Economists look at the following opportunity costs involved in running a business:

Labour costs

A painter and decorator is likely to be self-employed. When working out their costs for the accountant, costs of materials, petrol for transport and insurance payments will be entered, and as long as the total income received is greater than the costs, the decorator will consider that a profit has been made. However, what has not been included is the value of the time that has been spent doing the job. This will have an opportunity cost, because something else could have been done during that time. Economists would therefore want to include the price of labour as a cost.

Capital costs

A small business may be started with £10,000 of the entrepreneur's own money. If that money were not invested in the business, it could be saved and could earn interest instead. The loss of the opportunity to earn that interest must therefore be regarded as a cost for the economist.

Depreciation

Any property owned by a company will lose value over a period of time. This is called **depreciation**. Equipment has a limited life span and so, after a period of time, will need replacing. Think about a car. Most cars have a life span of around 10 years, so a car costing £10,000 would therefore be worth almost nothing after 10 years. One way to think of this would be to knock £1,000 off its value each year, but this is unrealistic: approximately 40% of the value of a new car is lost after one year. Therefore, after owning the car for one year, the business could sell the car for £6,000. That is the opportunity cost of owning the car: if the car were not owned by the

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business, they could have had \$6,000 instead. (There are, however, exceptions to this rule. Buildings that are kept in good repair can last a very long time, and indeed actually *increase* in value over a period of time - i.e. as with works of art, they appreciate.)

Goodwill, recognition and brand loyalty

A business will only stay in business if it has a good reputation. This will be built up over a period of time by giving customers what they want: either cheap or good-value products, a reliable service or high standards. When people are thinking of using a particular type of business, they will go to a name they know - particularly long-established brand names such as Phillips, Nestlé or Jaguar. Therefore, if a business is to be sold, it is not just the buildings and equipment that is paid for: it is the *image* of the business as well; and if this image is not sold also, the amount that someone is willing to pay for the goodwill, recognition or brand loyalty is being gone without - another opportunity cost.

Fixed and variable costs

A fixed cost is often referred to in business as an **overhead**. Fixed costs are costs that the business has to pay whether it produces anything or not. Think about somebody starting up as a hairdresser. Certain items will have to be purchased before any customers can be seen - for example, scissors, combs and brushes will be needed. If the hairdresser sees one customer, 10 customers or no customers during a week, the scissors, combs and brushes will still have to be paid for. If a shop is being used, rent for the

shop will have to be paid, as will charges for heating and lighting. These will all be fixed costs.

In this example, other things such as hair shampoo or conditioners will also need to be bought, but the quantities of these that are bought will depend on the number of customers seen. The costs of these latter items are therefore called **variable costs**.

Consider an aeroplane flying from Frankfurt to New York. Whether it carries one passenger or 500, most of the costs involved in flying that aeroplane still have to be paid, namely landing fees, fuel bills, pay for the flight crew. These are the fixed costs. On the other hand, some costs will rise as more passengers are carried. These are the variable costs. In this example, food and drink may be the only variable costs. The price charged to a passenger could be very low (such as when flights are discounted), and it would still make sense to carry the passenger. As long as you can cover the variable costs and a little bit more, it makes sense to sell a place on the flight: even £1 in excess of the variable costs is £1 towards the fixed costs that have to be paid whether or not that passenger flies.

Similarly, cross-channel ferry companies may offer you the chance to have a day out in France for £1. This usually applies in winter when there is a lot of spare space. The ferry would normally run perhaps half-full, and again virtually all the costs are fixed - they will have to be paid whether you sail or not. So your £1 is revenue that goes to offset those fixed costs. However, the ferry company also hopes that you will spend extra money in the bars, the cafeterias and the duty-free shop so that they gain more revenue!

Total and average costs

When the fixed costs are added to the variable costs, we arrive at the **total cost**. The total cost

is the sum of all the costs of the business. If we then divide the total cost by the total output, we find the average cost. So, if a plane is carrying just one passenger, then the average cost of the flight will be the same as the total cost. However, if the plane is carrying 500 passengers, the average cost will be the total cost of the flight divided by 500. The airline will want the fare charged to be greater than the average cost, but this will be impossible if only a few people are flying. As more people fly, however, the average cost will decrease until it is equal to the fare (at which point the company breaks even). Thereafter, as yet more tickets are sold, the money that is received from each fare will be greater than the average cost.

Marginal cost

In economics, marginal simply means *extra*. So the marginal cost for the airline is the extra cost of carrying one extra customer. We have already seen that this is very low compared with the average cost of a passenger because the marginal cost only takes into account the variable costs, while the average cost is calculated using the total cost.

A useful way to think about the relationship between average and marginal costs

Think about a football team whose average score in the season so far is 2 goals per match. Any score they get in their next game will be their marginal (i.e. extra) score. If this marginal score is less than 2, their average score will go down. If this marginal score is greater than 2, their average score will rise. If they score exactly 2, the marginal and average scores will be the same.

It is the same with costs. If the marginal cost

is less than the average cost, then the average cost will fall. If the marginal cost is greater than the average cost, then the average cost will rise.

The marginal cost curve will always cross the average cost curve at the average cost curve's lowest point – see Figure 9.1.

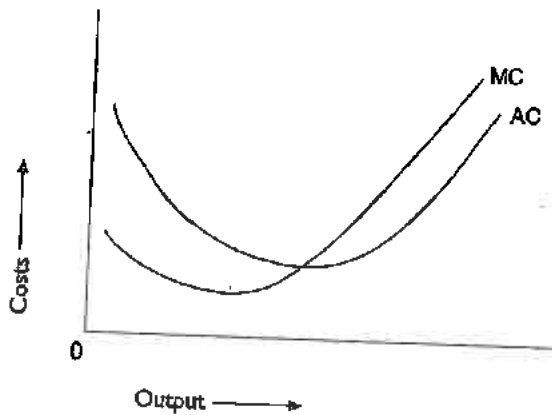


Figure 9.1 The average cost curve and the marginal cost curve

The troubled £10.5 billion Channel Tunnel warned earlier this week, that it was on the verge of collapsing from the weight of £2 million a month interest payments on its £3 billion debt.

(Adapted from *The Guardian*, 13 April 1995)

Compared to the Channel Tunnel, cross-channel ferry companies have a high proportion of variable costs. They have large crews and use a lot of fuel. Each crossing is expensive. The Channel Tunnel, on the other hand, is relatively cheap to operate. Most of the Tunnel's costs are fixed in that the cost of the original engineering product must be paid whether passengers use the Tunnel or not.

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Total, average and marginal revenue

Money that the airline receives in fares will be its revenue. Revenue is thus the money that a business receives from the sale of its goods or services. As Mr Micawber may have said: if revenue exceeds costs, good; if costs exceed revenue, disaster. **Total revenue** is all the money received from sales. **Average revenue** is total revenue divided by the number of sales; so, if British Airways receives £150,000 from the sale of 500 tickets for a flight from London to New York, the average revenue from each ticket is £300. **Marginal revenue** is the money received from selling one extra unit of output; for British Airways, this will involve selling one extra seat.

When is it worthwhile remaining in operation?

We have an aircraft that is going to fly to New York, but only 200 people have booked seats. Most of the costs, however, are still going to have to be paid. We can't ask those passengers who have already booked their seats to pay more for their tickets. However, what we can do is sell tickets more cheaply to try to fill some extra seats. Cheaper tickets might not cover the average price of carrying a passenger, but that doesn't matter: as long as it doesn't cost us more to carry a passenger than we receive for their ticket, it makes sense to take them anyway, even at a ridiculously cheap fare. So, at least in the

short run, it makes sense for a firm to carry on producing so long as its marginal revenue (in this example, the price of a cheaper ticket for one extra passenger) is greater than its marginal cost (in this example, the (variable) cost of carrying one extra passenger). This is because in the short run, some costs are fixed and some are variable. That in fact is the definition of 'the short run' in economics: that you have both fixed and variable costs. In the long run, you can get rid of your fixed costs, so that *all* your costs become variable. Businesses continue to operate in the short run even when they are making a loss, because they would have to pay their fixed costs even if they closed down. While they continue in operation, however, they can raise revenue that will cover their variable costs and at least make a contribution to fixed costs.

How long is the short run?

Think about a trader who sells hot dogs in the market. He has fixed costs: the repayments for the loan he took out to buy the stand; and he has variable costs: the costs of the sausages, rolls, onions and mustard. He can get rid of his fixed costs quite quickly by simply selling the stand and paying off his loan. Thus, the long run here is the time it takes to sell the stand – perhaps a day.

Compare that situation with a car manufacturer such as Vauxhall at Luton. If this manufacturer were to stop production, the company would have a huge factory to sell. It may be able to sell the land, but this could take months or years, and in the meantime, rent would still have to be paid until the site was sold, workers may need to be paid until their notice expired, and so forth. The short run for Vauxhall could therefore last months or years.

Simon shrinks losses to £18m

Simon Engineering, the access equipment to process engineering group, turned in reduced losses of £18m last year, down from £160m in 1993.

Over the past year, Simon has sold eight subsidiaries, closed four more, and sold a number of properties.

(Daily Telegraph, 21 March 1995)

Profit

Very simply, profit is a business's total revenue minus its total costs. That is very straightforward, but I'm afraid economists complicate things a bit. Remember that we said at the beginning of the chapter that economists were interested in opportunity costs. Similarly here, when it comes to profit, if a business made £10 million last year but could have made £6 million from doing something else, then that £6 million is the opportunity cost for the firm. The £6 million here would be called **normal profit**. Economists count normal profit as a cost.

If a business cannot make normal profit, then it switches to doing something else. Economists assume that any business will do the thing that it can make the most money by doing. Thus, normal profit is the amount of profit needed to *keep* a business doing what it is doing rather than switching to something else. Any profit that is made over and above normal profit is called **abnormal, supernormal or economic profit** - they all mean the same thing. In this example £6 million is normal profit and the remaining

£4 million is **supernormal or economic profit**.

Because economists treat normal profit as a cost (it's something that a business has to cover), abnormal profit is something that is made whenever total revenue is *greater* than total cost.

Summary

Economists are interested in opportunity cost rather than financial cost. Businesses face both fixed and variable costs in the short run, but in the long run *all* costs are variable.

The total cost is equal to the fixed costs plus the variable costs, while the average cost is the total cost divided by the level of output. The marginal cost is the cost of producing one extra unit of whatever the business produces.

Revenue is the money received from sales, and profit is any revenue that is greater than total cost. Normal profit is the amount of profit that makes it worthwhile for a business to carry on doing what it is doing rather than switch to something else. Abnormal profit is profit that is greater than normal profit.

chapter 9

MAKES YOU THINK!

The troubled £10.5 billion Channel Tunnel warned earlier this week, that it was on the verge of collapsing from the weight of £2 million a month interest payments on its £8 billion debt.

(Adapted from The Guardian, 13 April 1995)

- 1 What are Channel Tunnel's costs?
- 2 If you were a shareholder, would you charge, or would you not?
- 3 Sarah M... whether or not... fixed or variable?