
14 Capital expenditure decisions

Up to this point we have focused attention on short-term profit planning methods and techniques intended to improve routine, daytoday, business decisions at the property level. In this chapter we will concentrate on the longer term decisions, and in particular on those methods used to assess capital expenditure projects.

Examples of decisions involving capital expenditure include new product and/or service development, market repositioning, purchase of equipment/machinery, refurbishment of existing facilities, property extensions and new builds. These are critical decisions for a business which are not taken lightly, as they usually entail:

- ◆ Large sums of capital investment
- ◆ Longer periods of time
- ◆ Often irreversible processes

Discounted cash flow (DCF)

There are several approaches to evaluating capital expenditure decisions, but the most widely accepted method is discounted cash flow. The reason for this is that it recognizes that money has a time value.

So in the first instance, let's consider a simple example to understand the concept of the time value of money, assuming a rate of interest of 10% per annum:

- ◆ Therefore, £1 invested today will amount to £1.10 in one year's time.
- ◆ Conversely, the value of £1.10 received in one year's time will be worth £1 today.

If we extend this for a longer time period, for instance five years' time, the position will appear as presented in Figure 14.1.

Value of £1 at the end of 1 year at 10% is £1.00 + £0.10 = £1.10		
£1	2	£1.10 + £0.11 = £1.21
£1	3	£1.21 + £0.12 = £1.33
£1	4	£1.33 + £0.13 = £1.46
£1	5	£1.46 + £0.15 = £1.61

£1 receivable in 1 year's time is	<u>£1</u>	= £0.909
	1.1	
£1	2	<u>£1</u> = £0.826
		1.21
£1	3	<u>£1</u> = £0.751
		1.33
£1	4	<u>£1</u> = £0.683
		1.46
£1	5	<u>£1</u> = £0.621
		1.61

Figure 14.1: The time value of money

From Figure 14.1 we can see the value of money is directly affected by time and that interest is the method used to express time in the time value of money. Thus, using our example, if we discount £1, receivable in one year's time, back to today's value we find it is worth £0.909. Again, if we discount £1 receivable in two year's time, back to today's value it will be worth £0.826 and so on for the subsequent amounts. We can see this presented diagrammatically in Figure 14.2.

Year	0	1	2	3	4	5
Present value						
£1.000						
£0.909		← £1				
£0.826		←	← £1			
£0.751		←	←	← £1		
£0.683		←	←	←	← £1	
£0.621		←	←	←	←	← £1

Figure 14.2: Future cash flows discounted at 10% back to present day values

Therefore, at a discount rate of 10%, £1 received today has a present value of £1, whereas £1 received in five years' time has a present value of £0.621. So the present value of £1 received at the end of five years is calculated as follows:

$$£1.00 \times 0.621 = £0.621$$

Hence, if we received £10,000 at the end of five years the present value (assuming a 10% rate of interest) will be as follows:

$$£10,000 \times 0.621 = £6,210$$