

## 64.2 A drill to practise the effect of interest rate changes on the market value of a debenture

DEF plc has issued a 6% irredeemable debenture for £250 000.

X lends the company £1 000 and becomes the holder of £1 000 debenture stock.

What will be the approximate market value of X's holding:

- a) if interest rates rise so that companies like DEF plc are having to pay 9% per year on their borrowings?
- b) if interest rates fall, so that companies like DEF plc are able to borrow at 3% interest per year?

### Response

- a) Lending at interest can be seen as buying an income. By lending the company £1 000 at 6% per year, X has in effect spent £1 000 to buy an income of £60 per year.

If interest rates go up, the same income can be acquired with less capital, and so the market value of an income already in possession will fall.

In this particular case, if interest rates rise so that companies like DEF plc are having to pay 9% per year on their borrowings, we can determine the value of X's debenture by asking what value  $£C_1$  at 9% would generate an income of £60 per year.

If  $£C_1 \times 9\% = £60$ , then  $£C_1 = £666.67$  and X's income of £60 per year will be worth approximately £667.

- b) If interest rates fall, so that companies like DEF plc are able to borrow at 3% interest per year, then it would require a greater investment to acquire the same income and we must ask what value  $£C_2$  at 3% would generate an income of £60 per year.

If  $£C_2 \times 3\% = £60$ , then  $£C_2 = £2\ 000$  and X's income of £60 per year will be worth approximately £2 000.