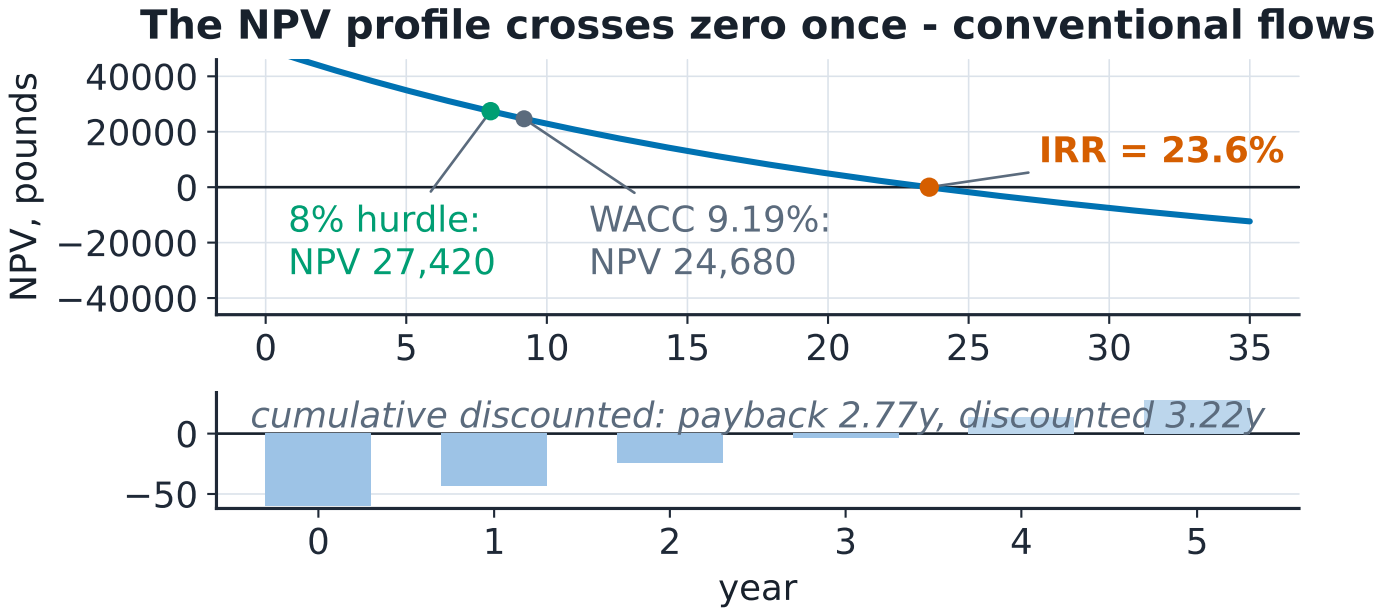
Exercise walk-through

9.1
Time value of money

University Business

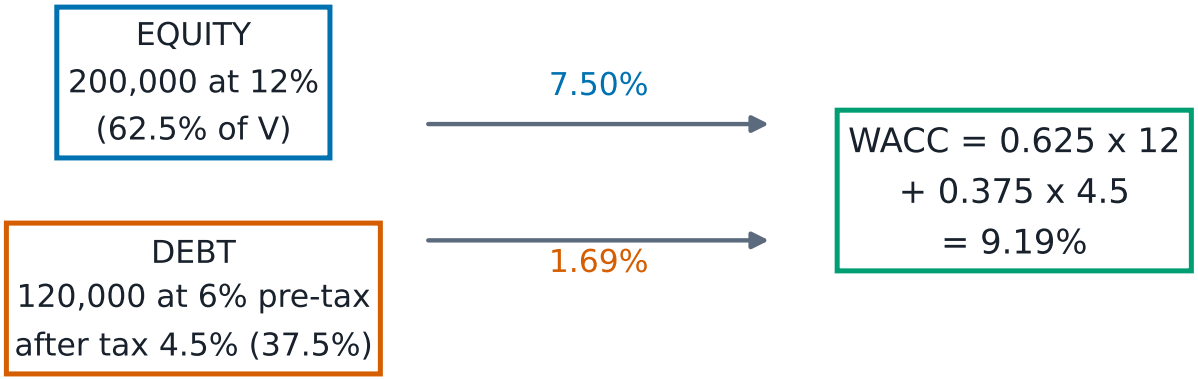
Appraisal: NPV is the referee



IRR 23.6%; NPV 27,420 at 8% and 24,680 at the 9.19% WACC.

Cost of capital: the honest hurdle

The hurdle is a blend of market values

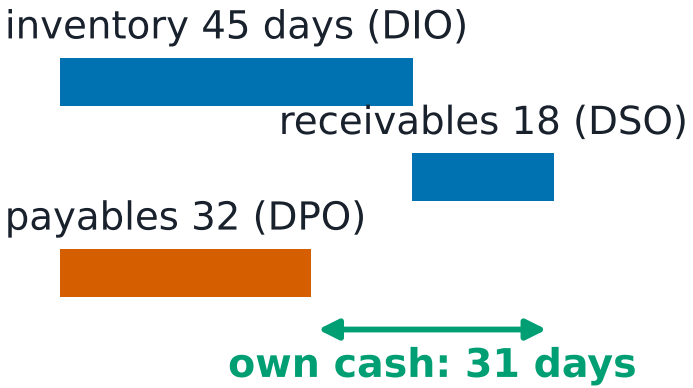


previously assumed 8%: every NPV was 2,740 too fat;
the proxy working: k_e = 4 + 1.1 x 6 + 1.4 private

> Equity 12% and after-tax debt 4.5% at 62.5/37.5 give WACC 9.19%.

Working capital: the cash the growth eats

The 31-day bridge of own cash



CCC = 45 + 18 - 32 = 31 days of sales tied up

Overtrading, one table

sales	100	**160**
NWC/sales	20%	**25%**
NWC	24,000	**48,000**

NWC DOUBLES
(1.6 x 1.25)

sales +60%, not +60% cash

A 31-day cash cycle; 60% growth doubles working capital.

Exercises 2.1·2.2

2.1 Discount £16,000 at 7% for 4 years, and compound £9,000 at 7% for 3 years (nearest pound). [4]

2.2 An equipment lease pays £6,000 a year for 6 years at 7%: value today? And a £3,500-forever sponsorship at 7%? [4]

Exercises 2.1·2.2

2.1 Discount £16,000 at 7% for 4 years, and compound £9,000 at 7% for 3 years (nearest pound). [4]

2.1

- $16{,}000/1.07^{4} = £12{,}228$.
- $9{,}000 \times 1.07^{3} = £11{,}025$.

2.2 An equipment lease pays £6,000 a year for 6 years at 7%: value today? And a £3,500-forever sponsorship at 7%? [4]

2.2

- $6{,}000 \times (1 - 1.07^{-6})/0.07 = £28{,}665$.
- $3{,}500/0.07 = £50{,}000$.

exercises.lol exercises.com.cn

Exercises 2.3·2.4

2.3 A card quotes 1.5% a month. The effective annual rate, and the cost of ignoring the difference on £20,000 over a year (nearest pound)? [3]

2.4 Offer A: £12,000 in year 2. Offer B: £5,000 now + £8,000 in year 3. Which wins at 7%, and by how much? [4]

Exercises 2.3·2.4

2.3 A card quotes 1.5% a month. The effective annual rate, and the cost of ignoring the difference on £20,000 over a year (nearest pound)? [3]

2.3

- Effective: $1.015^{12} - 1 = 19.56\%$.
- 18% naive vs 19.56%: £20,000 × 0.0156 ≈ £312 of understated cost.

2.4 Offer A: £12,000 in year 2. Offer B: £5,000 now + £8,000 in year 3. Which wins at 7%, and by how much? [4]

2.4

- A today: $12{,}000/1.1449 = £10{,}481$.
- B today: $5{,}000 + 8{,}000/1.225 = 5{,}000 + 6{,}531 = £11{,}531$.
- B wins by £1,050 – one line, because both sit at today. (stated across the marks)