Getting the cash flows right

MODULE 4 | PART C.3.2 | STUDENT COMPANION

Worked example

Include	Exclude
Initial investment (refined as estimates firm up)	Sunk costs already paid (e.g. a past feasibility study)
Risk reserve within estimates (scope changes priced separately)	Interest and other finance costs - already in the discount rate
Working capital: outflow at the start, inflow when released	Depreciation itself - a non-cash expense
Tax on revenues; tax deductions on expenses	
Tax saving from depreciation (tax rate x annual write-off)	
Residual value, and tax on any gain or loss on disposal	

Formulas and rules

Item	Rule
Depreciation tax saving	Tax rate x tax depreciation for the year
Project life	Based on how long the output earns cash - not on tax write-off periods
Residual value	Can be negative (e.g. site rehabilitation); matters most for short projects
Forecasts	Revenue: market growth, share, competitors, prices. Reconcile forecast and actual cash flows during the project

Question 1

A laundry company is evaluating new machines costing $180,000, written off for tax over three years at a 30% tax rate. It has already paid $12,000 for a consultant's report. The project needs $25,000 of extra working capital, released at the end. The machines will be financed by a loan costing $9,000 a year in interest, and are expected to sell for $15,000 at the end of year three. Which items belong in the NPV cash flows, and what is the annual tax saving from depreciation?

Worked answers

MODULE 4 | PART C.3.2 | WORKED ANSWERS - ATTEMPT THE QUESTIONS FIRST

Question 1 - Worked answer

Item	Treatment
Machines $180,000	Include - year 0 outflow
Consultant's report $12,000	Exclude - sunk cost
Working capital $25,000	Include - year 0 outflow; year 3 inflow
Loan interest $9,000 a year	Exclude - in the discount rate
Residual value $15,000	Include - year 3 inflow (plus any tax on a gain)
Depreciation tax saving	30% x $60,000 = $18,000 a year, years 1-3

Depreciation itself never appears as a cash flow; only its tax effect does.