# Finance and accounting (A Level)

The income statement and statement of financial position, depreciation, ratio analysis of profitability, liquidity, gearing and efficiency, investment appraisal (payback, ARR, NPV) and finance and accounting strategy.

## 10.1 Financial statements

### The income statement (profit and loss account)

The **income statement** shows **revenue, costs and profit over a period** (normally a year).

| Line | Meaning |
|---|---|
| **Revenue** | sales turnover |
| **− Cost of sales** | direct cost of goods sold (opening inventory + purchases − closing inventory) |
| **= Gross profit** | revenue − cost of sales |
| **− Expenses** | wages, rent, marketing, **depreciation** |
| **= Operating profit** | gross profit − expenses |
| **− Interest** | finance costs |
| **= Profit before tax** | |
| **− Tax** | corporation tax |
| **= Profit for the year** | **retained** or paid as **dividends** |

**Gross profit = revenue − cost of sales. Operating profit = gross profit − expenses. Profit for the year = profit before tax − tax.**

### The statement of financial position (balance sheet)

It shows **assets, liabilities and equity at a date**.

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| Section | Contents |
| --- | --- |
| **Non-current assets** | **land, buildings, machinery**, intangible assets (brands, patents) |
| **Current assets** | **inventory, receivables (debtors), cash** |
| **Current liabilities** | payable **within a year**: **payables (creditors)**, overdraft, tax |
| **Non-current liabilities** | **long-term loans**, debentures |
| **Equity (capital and reserves)** | **share capital**, **retained earnings** |

**Net assets = total assets − total liabilities = equity. Working capital = current assets − current liabilities. The statement balances because assets are financed by liabilities and equity.**

## Depreciation

**Depreciation** spreads the **cost of a non-current asset over its useful life**. **Straight-line: (cost − residual value) ÷ useful life**. A machine costing $50,000 with a $5,000 residual value over 5 years loses (50,000 − 5,000) ÷ 5 = **$9,000** a year, charged as an **expense**, and the **asset value** on the statement falls each year. **Reducing balance** depreciates a **fixed percentage** of the remaining value.

## Inventory valuation

Inventory is hard to value: items may be **damaged, out of date or hard to sell**, and the **cost** may differ from what it can be sold for. Accounts use the **net realisable value (NRV)** method: inventory is valued at the **lower of cost and the amount it could be sold for, minus the costs of selling it** (**NRV = expected selling price − costs to complete and sell**). This avoids **overstating** assets and profit.

## Intangible assets, goodwill and users of accounts

**Goodwill** is the value of a business **above its net assets** (brand, customers, reputation). **Users of accounts: owners**, **managers**, **lenders**, **employees**, **suppliers**, **government** and **competitors**, each looking at **different information**.

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# 10.2 Analysis of published accounts

## Profitability ratios

| Ratio | Formula |
|---|---|
| **Gross profit margin** | **gross profit ÷ revenue × 100** |
| **Operating (net) profit margin** | **operating profit ÷ revenue × 100** |
| **Return on capital employed (ROCE)** | **operating profit ÷ capital employed × 100** (capital employed = **equity + non-current liabilities**) |

**ROCE shows how effectively capital is used. Compare it to interest rates and competitors. If operating profit is $30m and capital employed $150m, ROCE = 20%.**

## Liquidity ratios

| Ratio | Formula | Guide |
|---|---|---|
| **Current ratio** | **current assets ÷ current liabilities** | around **1.5 to 2** |
| **Acid test (quick) ratio** | **(current assets − inventory) ÷ current liabilities** | around **1** |

Low liquidity risks **being unable to pay bills**; very high liquidity suggests **idle cash** or too much inventory.

## Gearing

**Gearing = non-current liabilities ÷ capital employed × 100. High gearing (above about 50%) means high interest and risk, but cheaper finance when profits are rising; low gearing is safer.**

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## Efficiency ratios

| Ratio | Formula |
| --- | --- |
| **Inventory turnover** | **cost of sales ÷ average inventory** (times per year) |
| **Trade receivables turnover (days)** | **trade receivables ÷ credit sales × 365** |
| **Trade payables turnover (days)** | **trade payables ÷ credit purchases × 365** |

**Receivables days = trade receivables ÷ credit sales × 365; payables days = trade payables ÷ credit purchases × 365. Receivables of $30,000 on credit sales of $365,000 give 30,000 ÷ 365,000 × 365 = 30 days; payables of $24,000 on credit purchases of $146,000 give 24,000 ÷ 146,000 × 365 = 60 days. Inventory turnover = cost of sales ÷ average inventory: cost of sales $480,000 and average inventory $40,000 gives 12 times a year.**

Faster **inventory turnover** and **short receivable days** improve **cash flow**; long **payable days** help cash flow but may **strain suppliers**. **Improving efficiency:** tighter **credit control**, better **inventory management** (such as JIT) and negotiating **longer supplier credit**.

## Shareholder ratios

**Dividend per share = total dividends ÷ number of shares**; **dividend yield = dividend per share ÷ share price × 100**; **dividend cover = profit after tax ÷ dividends**; **earnings per share**; **price/earnings ratio**.

## Interpreting ratios

Compare ratios **over time**, **with rivals** and **with the industry**, and consider the **context** (type of business, **economic conditions**). **Limits:** accounts are **historic**, **accounting policies** differ, **window dressing**, ratios ignore **non-financial** factors (staff, brand) and **inflation**. Always **explain causes** and **suggest actions**.

TRY IT

Gross margin is stable at 40% but operating margin has fallen from 15% to 9%. What does this suggest?

**Cost of sales** is under control, but **expenses** (overheads such as wages, marketing or depreciation) have **risen** faster than revenue.

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## Investment ratios

**Dividend yield (%) = dividend per share ÷ market price per share × 100. Dividend cover = profit for the year ÷ annual dividend. Earnings per share = profit for the year ÷ number of shares. Price/earnings (P/E) ratio = market price per share ÷ earnings per share. A share priced at $6 with a dividend of 30 cents has a yield of 5%. Profit of $600,000 and dividends of $200,000 give cover of 3 times. With EPS of 50 cents and a $6 price, the P/E is 12.**

A **high P/E** suggests investors expect **growth** (or the share is expensive); a **high yield** gives **income** but may signal **risk**. **Return to investors** can be improved by **raising profit**, **paying more dividends** (at the cost of retained funds) or **growth** that lifts the share price.

# 10.3 Investment appraisal

**Investment appraisal** evaluates whether **a project is worth its cost** by comparing **cash flows**. Methods:

| Method | Description | Strength | Weakness |
|---|---|---|---|
| **Payback period** | **time to recover the initial investment** | **simple**, shows **risk** | ignores cash flows **after payback** and **time value** |
| **Accounting rate of return (ARR)** | **(average annual profit ÷ average investment) × 100** | uses **all years**, gives a % to compare with other projects or the cost of finance | ignores the **timing** of cash flows |
| **Net present value (NPV)** | **sum of discounted cash flows − initial cost** | accounts for **time value of money** | **discount rate** estimates |

**Payback (even cash flows) = initial cost ÷ annual cash flow. Cost $120,000, cash flow $30,000 a year: 4 years. ARR = (average annual profit ÷ average investment) × 100, where average annual profit = (total net returns − initial cost) ÷ number of years and average investment = (initial cost + residual value) ÷ 2. NPV discounts each year's cash flow: PV = cash flow ÷ $(1 + r)^n$; accept if NPV is positive.**

**Example ARR:** a machine costs $100,000, has a residual value of $20,000 and brings net returns of $35,000 a year for 4 years (total $140,000). **Average annual profit** = (140,000 − 100,000) ÷ 4 = **$10,000**. **Average investment** = (100,000 + 20,000) ÷ 2 = **$60,000**. **ARR** = 10,000 ÷ 60,000 × 100 = **16.7%**. Compare it with the **target return** or the **interest rate**: if the target is 15%, the project **passes**.

**Example NPV** at 10%: cost $100,000, cash flows $50,000 in years 1 to 3. PV = 45,455 + 41,322 + 37,566 = 124,343 (approx.), NPV = **+$24,343**: the project is **worthwhile**.

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Investment decisions also depend on **qualitative** factors (**risk, strategic fit, environmental and ethical impact, objectives, uncertain forecasts**) and use **sensitivity analysis**.

# 10.4 Finance and accounting strategy

## Sources of finance and strategy

Finance strategy chooses the **mix of debt and equity** (the **capital structure**) to balance **cost**, **risk** and **control**. **Debt** is cheaper but increases **gearing** and **fixed** costs. **Equity** has no fixed repayments but **dilutes ownership** and expects **dividends**.

## Profit and cash management

**Profit improvement:** raise **revenue** (price, volume, mix) or cut **costs**. **Cash flow improvement:** manage **receivables, payables and inventory**. **Dividend policy** balances **shareholders' income** against **retained profit for growth**.

## Working capital management

**Working capital** is controlled by **managing inventory**, **receivables** (credit control, invoice factoring), and **payables**. Too little leads to **overtrading**; too much is **idle**.

## Window dressing and ethics

**Window dressing** presents accounts **more favourably** than the true position (delaying expenses, overvaluing assets). **Ethical accounting** requires **honest** reporting. **Auditors** check accounts.

## Budgeting and strategic decisions

**Cost and profit centres** make **managers accountable**. **Budgets** link finance to **strategy**. In **mergers and takeovers**, finance is used for **appraisal and funding**. Finance and accounting information is also used to **evaluate strategic options**, **forecast** and **monitor performance** against **corporate objectives**.

## Using accounts in strategy

An **annual report** contains the **financial statements** (profit or loss, financial position, cash flow), **directors' and auditors' reports** and **notes**; it is used by **investors** (returns), **lenders** (ability to pay), **managers** (control), **employees** (job security) and **government** (tax). **Financial statements** guide strategy by showing **strengths and weaknesses** (liquidity, profit, debt) and by letting firms **compare**

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**performance over time and against competitors**. Ratio results shape strategy: a **low current ratio** points to **working capital** action; **high gearing** may stop **more borrowing**.

**Strategic decisions change the ratios: raising debt** (instead of equity) **raises gearing** and **ROCE** (if returns exceed interest) but **adds risk**; **paying higher dividends** cuts **retained profit** and **dividend cover** but raises **yield**; **growth** may **cut liquidity** and **efficiency** at first (more inventory and receivables), and **cost-cutting** may **raise profit margins** but harm **quality**. **Limitations** of published accounts and ratios: they are **historic**, use **different accounting policies**, may be **window-dressed**, ignore **non-financial** factors (brand, staff), and **comparing firms of different types** can mislead.

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