

Cambridge AS & A Level · Business 9609

Business 9609 formulas and definitions

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AS Level

1.1 Enterprise

Added value = selling price – cost of bought-in materials and services

Opportunity cost: the benefit of the next best alternative given up when making a choice

Factors of production: land, labour, capital, enterprise

Entrepreneur: spots an opportunity, organises the factors of production and takes the risk of starting a business

Intrapreneur: an employee who acts like an entrepreneur inside a business; the business carries the risk

Dynamic business environment: fast-changing, so businesses must keep adapting (internal and external changes)

Business plan: a written document of a business's objectives and how it will achieve them

Risk can be estimated; uncertainty cannot be measured

1.2 Business structure

Primary: extracts natural resources; secondary: manufactures and processes; tertiary: services; quaternary: knowledge-based services

Public sector: owned or controlled by government; private sector: owned by individuals or private shareholders

Unlimited liability: owners personally liable for all business debts (sole traders, partnerships)

Limited liability: shareholders can lose only what they invested (companies)

Incorporated: separate legal identity and continuity (Ltd, plc)

Ltd: shares sold privately; plc: shares sold to the public, usually on a stock exchange, and accounts published

Shareholder's stake = $\text{shares owned} \div \text{total shares} \times 100$

Partner's share of profit = $\text{profit} \times \text{partner's part of the agreed ratio}$

1.3 Size of business

$$\text{Market share} = \frac{\text{firm's sales}}{\text{total market sales}} \times 100$$

$$\text{Market capitalisation} = \text{share price} \times \text{number of shares}$$

$$\text{Percentage change} = \frac{\text{new} - \text{old}}{\text{old}} \times 100$$

$$\text{Profit margin} = \frac{\text{profit}}{\text{revenue}} \times 100$$

Profit is a measure of performance, **not** of size

Organic growth: from within, using own resources; external growth: merger, takeover, joint venture, alliance

Horizontal: same stage; backward vertical: a supplier; forward vertical: a customer or outlet; conglomerate: an unrelated industry

Takeover: buying a controlling interest; hostile takeover: against the target's wishes

1.4 Business objectives

$$\text{Percentage change} = \frac{\text{new} - \text{old}}{\text{old}} \times 100$$

$$\text{Profit margin} = \frac{\text{profit}}{\text{revenue}} \times 100$$

Mission statement → aims → objectives → strategy → tactics (broadest to most detailed)

SMART: specific, measurable, achievable, realistic, time-limited

Triple bottom line: economic (profit), social (people), environmental (planet)

Decision-making: set objectives → gather information → consider options → choose → implement → review

Private sector: survival, profit, growth, market share, shareholder value; public sector: service, low prices, quality, government targets; social enterprise: social and environmental aims first

1.5 Stakeholders in a business

Stakeholder: an individual or group with an interest in the business, who affects or is affected by its activities

Internal: owners or shareholders, managers, employees. External: customers, suppliers, lenders, government, local community, competitors, pressure groups

Shareholders are one stakeholder group (internal), not another word for stakeholders

$$\text{Percentage change} = \frac{\text{new} - \text{old}}{\text{old}} \times 100$$

Accountability: annual report and accounts, AGM, laws and regulators, CSR reports

2.1 Human resource management (HRM)

$$\text{Labour turnover} = \frac{\text{number of employees leaving in the period}}{\text{average number of employees in the period}} \times 100$$

Recruitment attracts applicants (adverts, agencies, online); selection chooses one (CV, résumé, form, interview, references, tests, assessment centre)

Job description = the job; person specification = the ideal person

Redundancy = the job is no longer needed (voluntary or involuntary); dismissal = ended because of the employee (fair or unfair)

Induction = new staff; on-the-job = at work, while working; off-the-job = away from the job

Collective bargaining: a union negotiates for all its members at once

2.2 Motivation

Time-based pay = hours worked $\times$ rate per hour

Monthly salary = annual salary $\div 12$

Piece-rate pay = units produced $\times$ rate per unit (add up each product separately)

Commission = commission rate $\times$ value of the employee's sales; total pay = basic pay + commission

Vroom's expectancy theory: motivation = $E \times I \times V$ (expectancy, instrumentality, valence)

Content theories (what motivates): Taylor, Mayo, Maslow, Herzberg, McClelland. Process theory (how people decide): Vroom

Maslow's levels, bottom to top: physical, safety, social, esteem, self-actualisation

Herzberg: hygiene factors only prevent dissatisfaction; motivators create satisfaction

McClelland's three needs: achievement, affiliation, power (authority)

Financial motivators: time-based pay, salary, piece rate, commission, bonus, profit sharing, performance-related pay, fringe benefits

Non-financial motivators: training, promotion, development, status, job re-design, team working, empowerment, participation, job enrichment

2.3 Management

Traditional manager functions: planning, organising, directing, controlling

Fayol's functions of management: forecasting and planning, organising, commanding, coordinating, controlling

Mintzberg's interpersonal roles: figurehead, leader, liaison

Mintzberg's informational roles: monitor, disseminator, spokesperson

Mintzberg's decisional roles: entrepreneur, disturbance handler, resource allocator, negotiator

Management styles by who decides: autocratic = the manager alone; paternalistic = the manager, on the staff's behalf; democratic = the manager with employees; laissez-faire = employees

McGregor's Theory X manager assumes workers dislike work and need control; Theory Y manager assumes workers seek responsibility and can be trusted

3.1 The nature of marketing

$$\text{Market share} = \frac{\text{sales of the business}}{\text{total market sales}} \times 100$$

$$\text{Total market size} = \frac{\text{sales of the business}}{\text{market share (\%)}} \times 100$$

$$\text{Market growth} = \frac{\text{new market size} - \text{old market size}}{\text{old market size}} \times 100$$

Change in market share is in **percentage points**: from 18% to 15% is a fall of 3 percentage points

Demand rises: price and quantity both rise. Supply falls: price rises, quantity falls

Price changes the quantity demanded or supplied (along the curve); other factors shift the curve

Segmentation methods: geographic, demographic, psychographic

3.2 Market research

$$\text{Percentage of respondents} = \frac{\text{number giving the answer}}{\text{total respondents}} \times 100$$

$$\text{Number of respondents from a percentage} = \frac{\text{percentage}}{100} \times \text{number of respondents}$$

$$\text{Response rate} = \frac{\text{number of replies}}{\text{number asked}} \times 100$$

$$\text{Percentage change} = \frac{\text{new value} - \text{old value}}{\text{old value}} \times 100$$

$$\text{Market share} = \frac{\text{one firm's sales}}{\text{total market sales}} \times 100; \text{ total market sales} = \frac{\text{one firm's sales}}{\text{its share as a decimal}}$$

$$\text{Index number} = \frac{\text{value in the year}}{\text{value in the base year}} \times 100, \text{ with the base year} = 100$$

$$\text{Mean} = \frac{\text{sum of the values}}{\text{number of values}}; \text{ median} = \text{middle value in order}; \text{ mode} = \text{most common value}$$

Primary research produces new information, gathered by the business itself to answer its own questions; secondary research uses information that already exists, gathered by others or earlier for another reason

Market research finds out about the market (size, growth, competitors) and about buyers (profiles, wants and needs), to lower the risk of decisions

3.3 The marketing mix

The 4Ps of the marketing mix: product, price, promotion, place

$$\text{total cost} = \text{variable cost per unit} \times \text{quantity} + \text{allocated fixed costs}$$

Cost-based price: $\text{price} = \text{unit cost} \times \left(1 + \frac{\text{mark-up}}{100}\right)$, where $\text{unit cost} = \frac{\text{total cost}}{\text{quantity}}$

$\text{revenue} = \text{price} \times \text{quantity sold}$

Product life cycle stages: development, introduction, growth, maturity, decline

Boston Matrix: star = high share, high growth; question mark = low share, high growth; cash cow = high share, low growth; dog = low share, low growth

The seven pricing methods: competitive, penetration, skimming, price discrimination, dynamic, cost-based, psychological

4.1 The nature of operations

Labour productivity per worker = $\frac{\text{output in the period}}{\text{number of workers}}$

Labour productivity per labour hour = $\frac{\text{output in the period}}{\text{total hours worked}}$

Total hours worked = number of workers $\times$ hours worked by each

Added value = selling price – cost of bought-in materials and services

Percentage change = $\frac{\text{new} - \text{old}}{\text{old}} \times 100$

Factors of production: land, labour, capital, enterprise

Transformational process: inputs $\rightarrow$ process $\rightarrow$ outputs

Operations methods: job, batch, flow, mass customisation

4.2 Inventory management

Three kinds of inventory: raw materials (and components), work in progress, finished products

Buffer inventory: the minimum stock level kept at all times as a safety margin against late deliveries or unexpected demand

Lead time: the time from placing an order with a supplier to receiving the goods

Re-order level: the quantity of stock at which a new order is placed

Re-order level = buffer inventory + (usage per period $\times$ lead time)

Maximum inventory = buffer inventory + re-order quantity (when deliveries arrive on time)

Units used or sold from a chart = sum of the tops of each fall – sum of the bottoms of each fall

Units used or sold = opening inventory + deliveries – closing inventory

JIT: inventory arrives just when it is needed, so little or none is stored

JIC: extra inventory is kept deliberately, in case demand rises or supplies fail

Supply chain management: coordinating the flow of goods, services and information from suppliers, through the business, to the customer

4.3 Capacity utilisation and outsourcing

Maximum capacity: the most output a business can produce and sustain in a period with its current resources

$$\text{Capacity utilisation} = \frac{\text{current output}}{\text{maximum possible output}} \times 100$$

Spare (excess) capacity = maximum capacity – current output

Capacity utilisation above 100%: operating over maximum capacity, possible only in the short term

$$\text{Fixed cost per unit} = \frac{\text{total fixed costs}}{\text{output}}, \text{ so it falls as capacity utilisation rises}$$

Two ways to improve capacity utilisation: raise output within existing capacity, or cut capacity (rationalisation)

Rationalisation: reducing the scale of operations, such as closing a site or selling machines, to cut spare capacity

Outsourcing (subcontracting): paying another business to carry out a business activity or function

5.1 Business finance

Businesses need finance to start up, to grow and to survive

Short-term need: under a year (inventory, wages, bills); long-term need: over a year (premises, machinery, expansion)

Profit = revenue – costs over a period; cash = money actually held at a point in time

Working capital = current assets – current liabilities (net current assets)

Current assets: inventory, trade receivables, cash; current liabilities: trade payables, overdraft, short-term loans, tax due

Trade receivables: money owed to a business by customers for goods or services supplied on credit and not yet paid for

Trade payables: money a business owes its suppliers for goods or services received on credit and not yet paid for

Change in working capital = this year's working capital – last year's

Capital expenditure: spending on non-current assets used for more than a year

Revenue expenditure: spending on day-to-day running costs used up within the year

Bankruptcy: an individual (sole trader, partner) declared unable to pay debts; personal assets can be sold

Liquidation: a company's assets are sold to pay creditors and the company is closed

Administration: an administrator takes control of an insolvent company to try to rescue it before liquidation

5.2 Sources of finance

Internal finance comes from within the business or its owners (owners' investment, retained earnings, sale of unwanted assets, sale and leaseback, working capital); external finance comes from outside it

Match the term: long-term needs (premises, machinery) need long-term finance; short-term needs (inventory, wages) need short-term finance

Retained earnings: profit kept in the business rather than paid to the owners

Sale and leaseback: selling a non-current asset and renting it back, so the business gets cash but keeps using the asset

Overdraft: an agreed limit up to which a business may take more money from its bank account than it holds; interest only on the amount overdrawn

Debt factoring: selling unpaid customer invoices to a factoring company for immediate cash, less a fee

Leasing: renting an asset for a fixed period; the leasing company keeps ownership

Hire purchase: a deposit and fixed instalments, with ownership passing to the buyer after the final instalment

Venture capital: risk capital for a small, fast-growing business, given in exchange for part-ownership

Debentures: long-term loans to a company from investors, with fixed interest, a set repayment date and no vote

Government grant: money from the government for a business or project, which usually does not have to be repaid

Factors in the choice of source: cost, flexibility, need to keep control, the use the money is put to, level of existing debt

Total cost of hire purchase = deposit + instalment $\times$ number of instalments

Total cost of leasing = lease payment $\times$ number of payments

Months before leasing has cost as much as buying = purchase price $\div$ monthly lease payment

Interest for one year = amount borrowed $\times$ annual interest rate

5.3 Forecasting and managing cash flows

Cash flow: the money flowing into and out of a business over a period (receipts and payments)

Cash flow forecast: an estimate of a business's future cash inflows and outflows, and the cash balances they leave, usually month by month

Net cash flow = total cash inflows – total cash outflows

Closing balance = opening balance + net cash flow

Opening balance for a month = closing balance of the month before

Missing opening balance = closing balance – net cash flow

Missing inflow = closing balance – opening balance + total outflows – the other inflows

In a cash flow forecast a negative figure is shown in brackets or with a minus sign, for example (4) or –4; the sign must be kept in the answer

Profit is revenue minus costs for a trading period (income statement); cash is the money actually received and paid when it moves

Improving cash flow: bring cash in sooner or in larger amounts, or pay cash out later or in smaller amounts

5.4 Costs

Fixed costs do not change with the level of output in the short run; variable costs change in proportion to output

Direct costs can be traced to one product, service or cost centre; indirect costs (overheads) are shared and cannot

Total cost = fixed costs + total variable costs

Total variable costs = variable cost per unit × output

Average (unit) cost = total cost ÷ output

Marginal cost: the increase in total cost when output rises by one unit

Profit = total revenue – total costs (direct costs + indirect costs)

Profit margin = profit ÷ revenue × 100

Full costing: every cost, fixed and variable, is shared out among the products or cost centres

Contribution costing: only variable (direct) costs are charged to products; fixed costs are paid from total contribution

Contribution per unit = price – variable cost per unit

Total contribution = total revenue – total variable costs = contribution per unit × units sold

Profit = total contribution – fixed costs

Break-even output = fixed costs ÷ contribution per unit

Output for a target profit = (fixed costs + target profit) ÷ contribution per unit

Fixed costs = break-even output × contribution per unit

Price needed to break even at a given output = fixed costs ÷ output + variable cost per unit

Margin of safety = actual (or forecast) output – break-even output, in units

Margin of safety as a percentage = margin of safety ÷ actual output × 100

Profit = margin of safety × contribution per unit

Contribution of a special order = (order price – variable cost per unit) × units – any extra fixed costs of the order

5.5 Budgets

A budget is a financial plan for a future period, agreed in advance and used as a target

Variance = actual figure – budgeted figure (state the size and whether it is favourable or adverse)

Favourable variance: revenue above budget, or a cost below budget (profit higher than planned)

Adverse variance: revenue below budget, or a cost above budget (profit lower than planned)

Percentage variance = $\text{variance} \div \text{budgeted figure} \times 100$

Budgeted profit = budgeted revenue – budgeted total costs; actual profit = actual revenue – actual total costs

Budgeted cost per unit = $\text{budgeted total cost} \div \text{budgeted number of units}$

Incremental budget = last period's budget adjusted by a set amount or percentage

Zero budgeting: every budget starts at zero and each item of spending must be justified

Flexible budget: variable costs re-worked for actual output = $\text{variable cost per unit} \times \text{actual output}$; fixed costs unchanged

A Level

6.1 External influences on business activity

Percentage change = $\frac{\text{new} - \text{old}}{\text{old}} \times 100$

With the exchange rate as foreign currency per one unit of home currency: $\text{price abroad} = \text{home price} \times \text{exchange rate}$

With the exchange rate as foreign currency per one unit of home currency: $\text{home-currency cost of an import} = \frac{\text{foreign price}}{\text{exchange rate}}$

Appreciation: exports dearer abroad, imports cheaper. Depreciation: exports cheaper abroad, imports dearer

Change in yearly interest = $\text{loan} \times \text{change in interest rate}$

Monetary policy: interest rates and money supply. Fiscal policy: taxation and government spending. Supply-side policy: long-run efficiency (training, deregulation, privatisation)

Macroeconomic objectives: low unemployment, low inflation, economic growth

Privatisation: state to private ownership. Nationalisation: private to state ownership

External influence: a factor outside the business that it cannot control, which can be a constraint or an opportunity

Environmental audit: a check of a business's effect on the environment and how sustainable it is

6.2 Business strategy

EMV of an option = $\sum(\text{probability} \times \text{financial result}) - \text{cost of the option}$

On a decision tree, the probabilities of the outcomes from one chance node add up to 1

Decision tree symbols: a square is a decision point, a circle is a chance point

Force field analysis: compare total driving forces with total restraining forces; weaken restraining forces or strengthen driving forces to make a change succeed

Percentage change = $\frac{\text{new} - \text{old}}{\text{old}} \times 100$

Strategic management: strategic analysis, strategic choice, strategic implementation

SWOT: strengths and weaknesses are internal; opportunities and threats are external

PEST: political, economic, social, technological (external factors only)

Porter's five forces: rivalry, threat of new entrants, threat of substitutes, buyer power, supplier power

Ansoff matrix: market penetration (lowest risk), product development, market development, diversification (highest risk)

Blue ocean strategy: create uncontested market space through differentiation at low cost; red ocean: crowded, existing markets

7.1 Organisational structure

Organisational structure: the formal arrangement of who does what, who reports to whom and who can make which decisions

A good structure is flexible, meets the business's needs, allows growth and development, and encourages intrapreneurship

Span of control: the number of people reporting directly to one manager

For the same number of staff, a wider span of control means fewer levels of hierarchy (a flatter structure)

Delegation: passing authority to make decisions down the hierarchy

Authority can be delegated; the delegating manager's responsibility for the result cannot

Accountability: having to answer to the person above for decisions and results

Centralised: important decisions kept at the top; decentralised: decision-making authority passed down to managers of regions, branches, products or departments

Matrix structure: project teams of specialists from different functions, each reporting to a functional and a project manager

Line: in the chain of command, doing the core work; staff: specialists who advise and support the line

7.2 Business communication

Communication: passing information from a sender to a receiver so that it is received and understood

The parts of communication: sender, message, method (medium), channel, receiver, feedback

The four methods of communication: spoken, written, electronic, visual

One-way communication: from sender to receiver with no feedback; two-way communication includes feedback

Vertical communication passes between levels of the hierarchy (up or down); horizontal communication passes between people at the same level

Formal channels follow the business's structure; informal communication (the grapevine) is unofficial contact between staff

Barrier to communication: anything that stops a message being sent, received or understood as intended

7.3 Leadership

Purposes of leadership: set a direction, inspire and motivate, make key decisions, lead change, set the culture, represent the business

Leadership roles in a business: directors, managers, supervisors, worker representatives

Leadership theories: trait (who the leader is), behavioural (what the leader does), contingency (it depends on the situation), power and influence (where the leader's power comes from), transformational (inspiring change through a vision)

French and Raven's sources of power: legitimate, reward, coercive, expert, referent

Emotional intelligence: the ability to recognise and control your own emotions and to recognise and respond to other people's

Goleman's four competencies of emotional intelligence: self-awareness, self-management, social awareness, social skills

$$\text{Labour turnover} = \frac{\text{number of staff leaving in a period}}{\text{average number of staff employed}} \times 100$$

$$\text{Percentage change} = \frac{\text{new} - \text{old}}{\text{old}} \times 100$$

7.4 Human resource management (HRM) strategy

$$\text{Labour productivity} = \frac{\text{output in a period}}{\text{number of employees}} \quad (\text{units per employee, not dollars})$$

$$\text{Absenteeism rate} = \frac{\text{days lost through absence}}{\text{number of employees} \times \text{working days per employee}} \times 100$$

$$\text{Labour turnover} = \frac{\text{number of employees leaving in a period}}{\text{average number of employees}} \times 100$$

$$\text{Average number of employees} = \frac{\text{number at start} + \text{number at end}}{2}$$

Hard HRM: employees as a cost to control (close supervision, imposed targets, flexible contracts to cut cost, minimum training); soft HRM: employees as an asset to develop (training, delegation, consultation, appraisal)

Flexible contracts: temporary, zero hours, part-time, full-time, annualised hours, flexi-time, home working, shift working, job sharing, compressed hours, gig economy

Measures of employee performance: labour productivity, absenteeism, labour turnover, waste or reject rate, accidents, lateness, complaints

MBO: objectives agreed between managers and employees, linked to the business's objectives, then monitored, reviewed and rewarded

8.1 Marketing analysis

$$\% \text{ change} = (\text{new} - \text{original}) \div \text{original} \times 100$$

$$\text{PED} = \% \text{ change in quantity demanded} \div \% \text{ change in price (negative for almost all products)}$$

$$\text{YED} = \% \text{ change in quantity demanded} \div \% \text{ change in income}$$

$$\text{PrED} = \% \text{ change in quantity demanded} \div \% \text{ change in promotional spending}$$

$$\text{Rearranged: } \% \text{ change in quantity demanded} = \text{elasticity} \times \% \text{ change in price, income or promotion}$$

Size above 1: elastic (responsive); size below 1: inelastic (less responsive); exactly 1: unit elastic

YED positive: normal good (above 1: luxury, income elastic); YED negative: inferior good

Revenue = price $\times$ quantity; price elastic: a price cut raises revenue; price inelastic: a price rise raises revenue

$$\text{Four-period centred moving average (trend)} = (\text{two consecutive four-quarter totals added}) \div 8$$

$$\text{Seasonal variation} = \text{actual} - \text{trend (keep the sign)}$$

$$\text{Average seasonal variation} = \text{total of that quarter's seasonal variations} \div \text{number of them}$$

$$\text{Forecast} = \text{projected trend} + \text{average seasonal variation for that quarter}$$

8.2 Marketing strategy

Contents of a marketing plan: objectives, resources (budget, people, time), research, marketing mix

SMART objectives: specific, measurable, achievable, realistic, time-bound

Coordinated marketing strategy: the four Ps consistent with each other, with the target market, with the budget and with the marketing objective

A marketing strategy must be consistent with the business, the product and the market

Methods of international entry, least to most commitment: agent or distributor, direct exporting, licensing, franchising, joint venture, direct investment

Pan-global marketing: one standard marketing mix in every country; local differences: the mix adapted to each country

Weighted score of an option = $\sum (\text{weight} \times \text{score})$ over all the factors

Forecast % change in quantity demanded = elasticity $\times$ % change in price (or in promotional spending)

With the price unchanged, revenue changes by the same percentage as the quantity sold

Marketing spend per customer = $\frac{\text{marketing spending}}{\text{number of customers}}$

9.1 Location and scale

Optimal location: the site giving the best balance of low costs and high revenue, quantitative and qualitative factors included

Relocation: moving an existing operation to a new site

Offshoring: moving a business activity from the home country to another country

Reshoring: bringing an offshored activity back to the home country

Globalisation: growing connection of the world's economies through trade, investment and information

Average (unit) cost = $\frac{\text{total cost}}{\text{output}}$

Economies of scale: falls in average (unit) cost as a business increases its scale of operations

Internal economies of scale: purchasing, technical, managerial, financial, marketing, risk-bearing

External economies of scale: from the growth of the industry in an area (concentration, infrastructure)

Diseconomies of scale: rises in average (unit) cost when a business grows beyond a certain scale

Causes of internal diseconomies: communication, coordination and control, slow decisions, low motivation

9.2 Quality management

Quality: how well a product meets the expectations of the customers who buy it, at the price they pay

Quality control: finding faults by inspecting or testing finished products or samples (detection)

Quality assurance: standards set for every stage of production, with checks at each stage (prevention)

TQM: every employee in every department responsible for quality; internal customers, zero defects, continuous improvement

Internal customer: the person or department inside the business that receives your work next

Benchmarking: comparing performance with the best performers, then setting targets and changing methods to match them

Percentage of output failing quality standards = $\frac{\text{units that fail}}{\text{total output}} \times 100$

Cost of correcting faulty output = output $\times$ fault rate $\times$ cost of correcting one unit

9.3 Operations strategy

EST of a node = the largest value of (EST of the node an arrow comes from + that arrow's duration); the first node's EST is 0

LFT of a node = the smallest value of (LFT of the node an arrow goes to – that arrow's duration); the final node's LFT equals its EST

Total float of an activity = LFT of its end node – its duration – EST of its start node

Free float of an activity = EST of its end node – its duration – EST of its start node

Minimum project duration = EST of the final node = the sum of the durations of the activities on the critical path

Critical path: the activities with zero total float, through nodes where EST = LFT

Dummy activity: a dashed arrow, with no duration and no resources, that shows a dependency

Three kinds of operational flexibility: volume, delivery time, specification

Process innovation changes how a product is made or a service delivered; product innovation changes what is sold

ERP: one shared database used by every department through its own module

Lean production: making the product with the least possible amount of every input by removing all kinds of waste

10.1 Financial statements

Gross profit = revenue – cost of sales

Cost of sales = opening inventory + purchases – closing inventory

Profit from operations (operating profit) = gross profit – expenses

Profit for the year = operating profit – interest (if any) – taxation

Retained earnings for the year = profit for the year – dividends

Net current assets = current assets – current liabilities

Net assets = non-current assets + net current assets – non-current liabilities = total assets – total liabilities

Total equity = share capital + reserves, and total equity = net assets

Net realisable value = expected selling price – costs of selling

Inventory is valued at the lower of its cost and its net realisable value

Straight-line depreciation per year = (cost – residual value) ÷ useful life in years

Carrying amount (net book value) = cost – total depreciation charged so far

10.2 Analysis of published accounts

Current ratio = current assets $\div$ current liabilities, written as $x : 1$

Acid test ratio = (current assets – inventory) $\div$ current liabilities, written as $x : 1$

Capital employed = issued share capital + reserves + non-current liabilities

ROCE = operating profit $\div$ capital employed $\times 100$

Gross profit margin = gross profit $\div$ revenue $\times 100$

Operating profit margin = operating profit $\div$ revenue $\times 100$

Profit margin = profit for the year $\div$ revenue $\times 100$

Operating profit = revenue – cost of sales – expenses; profit for the year = operating profit – interest – tax

Rate of inventory turnover = cost of sales $\div$ average inventory (times a year), where average inventory = (opening + closing inventory) $\div 2$

Trade receivables turnover = trade receivables $\div$ credit sales $\times 365$ (days)

Trade payables turnover = trade payables $\div$ credit purchases (or cost of sales) $\times 365$ (days)

Gearing ratio = non-current liabilities $\div$ capital employed $\times 100$

Dividend per share = total dividends $\div$ number of shares

Earnings per share = profit for the year $\div$ number of shares

Dividend yield = dividend per share $\div$ share price $\times 100$

Dividend cover = profit for the year $\div$ total dividends (times)

Price/earnings ratio = share price $\div$ earnings per share

10.3 Investment appraisal

Cumulative net cash flow: start with the capital cost as a negative figure and add each year's net cash flow

Payback months = amount still to recover at the start of the payback year $\div$ that year's net cash flow $\times 12$

Total profit of a project = total net cash flows – capital cost

Average (annual) profit = total profit $\div$ number of years

Average investment = (capital cost + residual value) $\div 2$

ARR = average profit $\div$ average investment $\times 100$ (%)

Present value = net cash flow $\times$ discount factor for that year

NPV = total present value of the future net cash flows – capital cost

Positive NPV: the project beats the return set by the discount rate; negative NPV: it falls short

10.4 Finance and accounting strategy

Capital employed = issued share capital + reserves + non-current liabilities

Gearing = $\text{non-current liabilities} \div \text{capital employed} \times 100 (\%)$

Forecast gearing after borrowing L = $(\text{non-current liabilities} + L) \div (\text{capital employed} + L) \times 100$

Forecast gearing after raising S from new shares = $\text{non-current liabilities} \div (\text{capital employed} + S) \times 100$

Existing owners' share after a share issue = $\text{existing shares} \div (\text{existing shares} + \text{new shares}) \times 100 (\%)$

ROCE = $\text{operating profit} \div \text{capital employed} \times 100 (\%)$

Gross profit margin = $\text{gross profit} \div \text{revenue} \times 100$; operating profit margin = $\text{operating profit} \div \text{revenue} \times 100 (\%)$

Operating profit = revenue – cost of sales – expenses; profit for the year = operating profit – interest – tax

Current ratio = $\text{current assets} \div \text{current liabilities}$; acid test ratio = $(\text{current assets} - \text{inventory}) \div \text{current liabilities}$ (both written $x : 1$)

Trade receivables turnover = $\text{trade receivables} \div \text{credit sales} \times 365$; trade payables turnover = $\text{trade payables} \div \text{credit purchases} \times 365$ (days)

Rate of inventory turnover = $\text{cost of sales} \div \text{average inventory}$ (times)

Dividend per share = $\text{total dividends} \div \text{number of shares}$; dividend yield = $\text{dividend per share} \div \text{share price} \times 100 (\%)$

Dividend cover = $\text{profit for the year} \div \text{total dividends}$ (times)

Earnings per share = $\text{profit for the year} \div \text{number of shares}$; P/E ratio = $\text{share price} \div \text{earnings per share}$

Retained profit = $\text{profit for the year} - \text{dividends}$

Value an offer puts on the whole company = $\text{price offered} \div \text{fraction of the shares bought}$