Finance and accounts (3.1-3.9)

International Baccalaureate · IB Diploma · Business Management · SL

Finance and accounts

IB Diploma Programme Business Management SL, Unit 3 *Finance and accounts* (first assessment 2024). This topic covers the SL content of sections 3.1 to 3.8: why businesses need finance and where they get it, costs and revenues, final accounts, ratio analysis, cash flow and investment appraisal. Debt/equity ratio analysis (3.6), budgets (3.9), net present value, intangible assets and depreciation are HL only and are left out here. The worked examples use the course's repair business in its second year as a company, so every number below fits with every other.

In 2017 the bike-sharing company ofo had millions of yellow bikes on the streets of Chinese cities and had raised billions of dollars from investors. By the end of 2018 it had spent most of that money, and more than ten million users were waiting in an online queue to get their deposits back. Customers liked the product. The company failed because cash ran out. This topic shows how a business plans its money, reads its accounts and checks whether a project is worth the cost.

Must-know for this topic:

Idea	Key content
finance	capital against revenue expenditure; internal against external sources
final accounts	income statement; statement of financial position
profitability	gross profit margin 40%, profit margin 15%, ROCE 25%
liquidity	current ratio 2.0, acid test 1.25
cash flow	profit is not cash; working capital cycle; forecast
appraisal	payback 3 years, ARR 8.3%

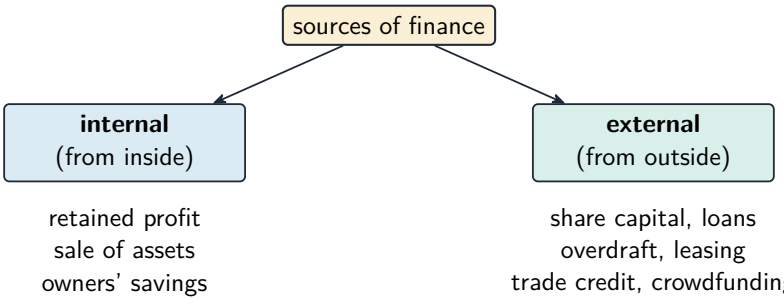
Finance and its sources

A business spends money in two ways.

- **Capital expenditure** buys **non-current assets**, things the business keeps for more than a year: a workshop, a machine, a van.
- **Revenue expenditure** pays for day-to-day running: wages, parts, rent and electricity.

The money for each should come from a source that fits. A long-term asset needs long-term finance. Paying for a new workshop with an overdraft is risky, because the

bank can ask for the overdraft back at any time.



Internal finance comes from inside the business; external finance comes from outside

Internal finance comes from inside the business:

- **personal funds** : the owner's own savings, the main source for a sole trader;
- **retained profit** : profit kept in the business instead of being paid to the owners. It costs no interest, but a new or loss-making business has none;
- the **sale of assets** the business no longer needs, such as an old van.

External finance comes from outside:

Source	What it is	For and against
share capital	money from selling shares (companies only)	never repaid and no interest; the owners lose some control
loan capital	a bank loan repaid with interest over years	large sums; interest must be paid even in a bad year
overdraft	the bank lets the account go below zero	flexible and quick; expensive, and the bank can end it at any time
trade credit	suppliers let the business pay 30 to 60 days later	free; paying late harms the relationship
crowdfunding	many people each give a small amount online	also tests the idea; most campaigns fail to reach their target
leasing	renting equipment instead of buying it	no large payment; costs more in total

Source	What it is	For and against
microfinance	small loans to people that banks will not serve	helps very small and new businesses; amounts are small
business angels	rich individuals who invest and give advice	money plus experience; they want a share of the business

Sources are also short term (under a year: overdraft, trade credit), medium term (one to five years: leasing, most loans) or long term (over five years: share capital, long loans). To choose, a manager weighs the cost, the amount needed, how long it is needed for, control of the business, and how much the business has already borrowed.

> **Worked example.** The repair business built a second workshop for 120,000. Half came from retained profit and half from a five-year bank loan. The workshop will earn money for many years, so long-term finance fits. The monthly parts bill uses trade credit. For eleven days in December, when wages were paid before customers paid their bills, the business used its overdraft.

Costs, revenues and final accounts

Costs and revenues

- A **fixed cost** does not change with output: rent, salaries, insurance.
- A **variable cost** changes with output: car parts, paint, energy for the machines.
- A **semi-variable cost** has a fixed part and a variable part, such as a phone contract with a monthly charge plus a cost per call.
- A **direct cost** belongs to one product or department, such as the parts used in one repair. An **indirect cost**, or **overhead**, is shared, such as the manager's salary.

Total revenue is price × quantity sold. The repair business does 2,000 repairs a month at an average price of 25, so its revenue is $2{,}000 \times 25 \times 12 = 600{,}000$ a year. Many businesses also have other **revenue streams**: the repair business sells tyres, rents out its car wash and earns a fee from an insurance company for every customer it sends.

Final accounts

The **final accounts** are prepared at the end of each year. Many **stakeholders** read them: owners and shareholders check profit, banks check the business can repay, suppliers check it can pay its bills, employees check their jobs are safe, and the government checks tax.

The **income statement** shows how much profit the business made over the year.

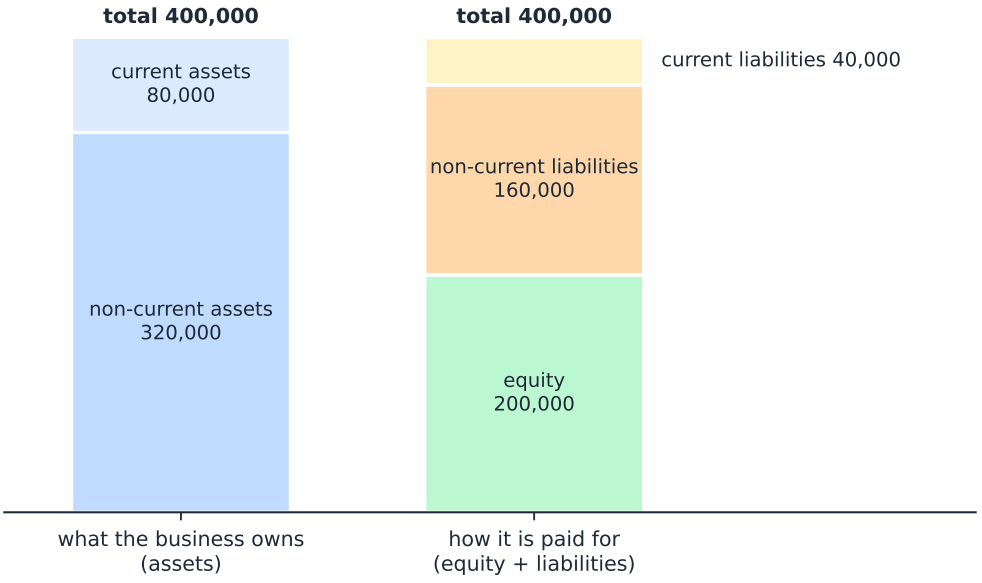
Income statement for the year	**$**
sales revenue	600,000
cost of sales	(360,000)
gross profit	240,000
expenses (wages, rent, marketing)	(150,000)
profit before interest and tax	90,000
interest	(10,000)
profit before tax	80,000
tax at 25%	(20,000)
profit for the period	60,000
dividends	(20,000)
retained profit	40,000

Brackets mean the number is taken away. **Cost of sales** is the direct cost of the repairs that were sold: opening stock 18,000, plus parts bought 372,000, minus closing stock 30,000, gives 360,000.

The **statement of financial position** , or balance sheet, is a picture of the business on one day: what it owns (**assets**), what it owes (**liabilities**) and the owners' money (**equity**).

Statement of financial position on 31 December	**$**
non-current assets: property 240,000; equipment 80,000	320,000
current assets: stock 30,000; debtors 45,000; cash 5,000	80,000
current liabilities: creditors 25,000; overdraft 5,000; short-term loan 10,000	(40,000)
net current assets (working capital)	40,000
non-current liabilities: bank loan	(160,000)
net assets	200,000
equity: share capital 120,000; retained earnings 80,000	200,000

Current assets turn into cash within a year. **Debtors** are customers who still owe money. **Current liabilities** must be paid within a year; **creditors** are suppliers the business still owes. Current assets minus current liabilities is **working capital** : $80{,}000 - 40{,}000 = 40{,}000$, the money available for day-to-day running. Net assets always equal equity, because everything the business owns is paid for either by borrowing or by the owners.



The balance sheet balances: total assets of 400,000 are paid for by equity, long-term debt and short-term debt

Profitability and liquidity ratios

Ratio analysis compares numbers from the final accounts so that a business can be compared with last year and with its rivals.

Profitability ratios measure profit against sales or against the money invested.

$$\text{gross profit margin} = \frac{\text{gross profit}}{\text{sales revenue}} \times 100 = \frac{240{,}000}{600{,}000} \times 100 = 40\%$$

$$\text{profit margin} = \frac{\text{profit before interest and tax}}{\text{sales revenue}} \times 100 = \frac{90{,}000}{600{,}000} \times 100 = 15\%$$

Capital employed is non-current liabilities plus equity: $160{,}000 + 200{,}000 = 360{,}000$.

$$\text{ROCE} = \frac{\text{profit before interest and tax}}{\text{capital employed}} \times 100 = \frac{90{,}000}{360{,}000} \times 100 = 25\%$$

The **return on capital employed** (ROCE) of 25% is far above the roughly 6% interest on the bank loan, so borrowing to invest has paid off. To raise profitability, a business can raise prices where customers are loyal, buy parts more cheaply, cut waste, or sell more of its high-margin services.

Liquidity ratios show whether the business can pay its short-term debts.

$$\text{current ratio} = \frac{\text{current assets}}{\text{current liabilities}} = \frac{80{,}000}{40{,}000} = 2.0$$

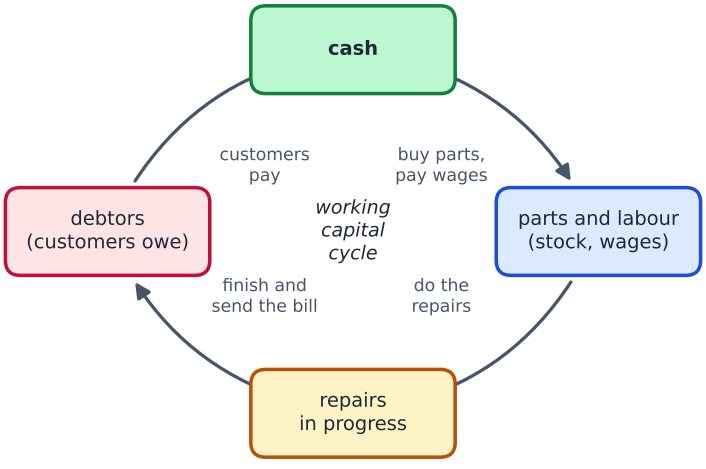
$$\text{acid test ratio} = \frac{\text{current assets} - \text{stock}}{\text{current liabilities}} = \frac{80{,}000 - 30{,}000}{40{,}000} = 1.25$$

A current ratio between 1.5 and 2 is usually safe. The **acid test ratio** leaves out stock, because stock may be slow to sell; a result above 1 is usually safe. Both results here are healthy. A ratio far above the safe range is not good either: money is sitting idle instead of earning a return. To improve liquidity, a business can sell old stock, collect money from debtors faster, or turn an overdraft into a long-term loan. Each step has a cost: discounts to sell stock lower profit, and pushing customers to pay faster may lose some of them.

Cash flow

Profit and **cash flow** are different. Profit is revenue minus costs for the year. Cash flow is the money that actually comes in and goes out, and when. A repair finished on 28 December counts as revenue in December, but if the customer pays in February, the cash arrives in February. A profitable business can still fail if it has no cash to pay wages and suppliers. A business with cash can survive a loss-making year.

The **working capital cycle** is the time between paying for inputs and receiving cash from customers.



The longer the working capital cycle, the more cash the business needs to keep running

Businesses hold cash for three reasons: to pay day-to-day bills, to keep a safety reserve for surprises, and to take chances when they come, such as a supplier's discount for buying in bulk.

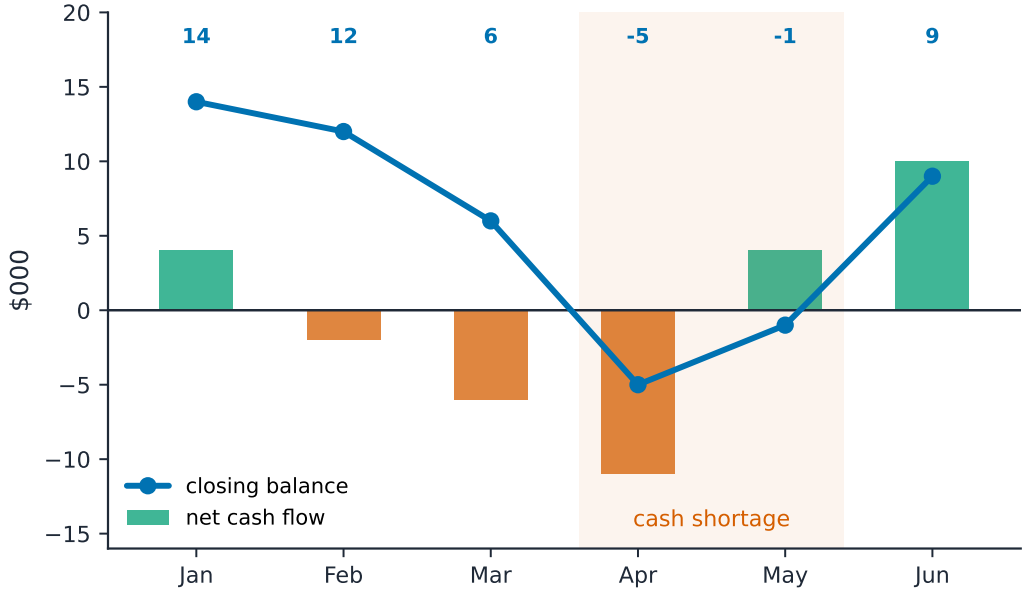
A **cash flow forecast** shows the cash a business expects to receive and pay out, month by month. Each month:

- net cash flow = cash in − cash out;
- closing balance = opening balance + net cash flow;
- the closing balance becomes next month's opening balance.

> **Worked example.** The repair business forecasts the first half of next year (in $000).

	Jan	Feb	Mar	Apr	May	Jun
opening balance	10	14	12	6	−5	−1
cash in	46	44	42	44	50	54
cash out	42	46	48	55	46	44
net cash flow	4	−2	−6	−11	4	10
closing balance	14	12	6	−5	−1	9

In April the yearly insurance and a large parts order are paid in the same month, and the balance falls to −5,000. The forecast shows the problem in January, so the manager has three months to arrange an overdraft or move a payment.



The closing balance falls below zero in April and May: the forecast warns of a cash shortage three months early

A forecast is only as good as its guesses. Sales may be lower than expected, customers may pay late, and costs may rise. Managers should change it as new information

comes in.

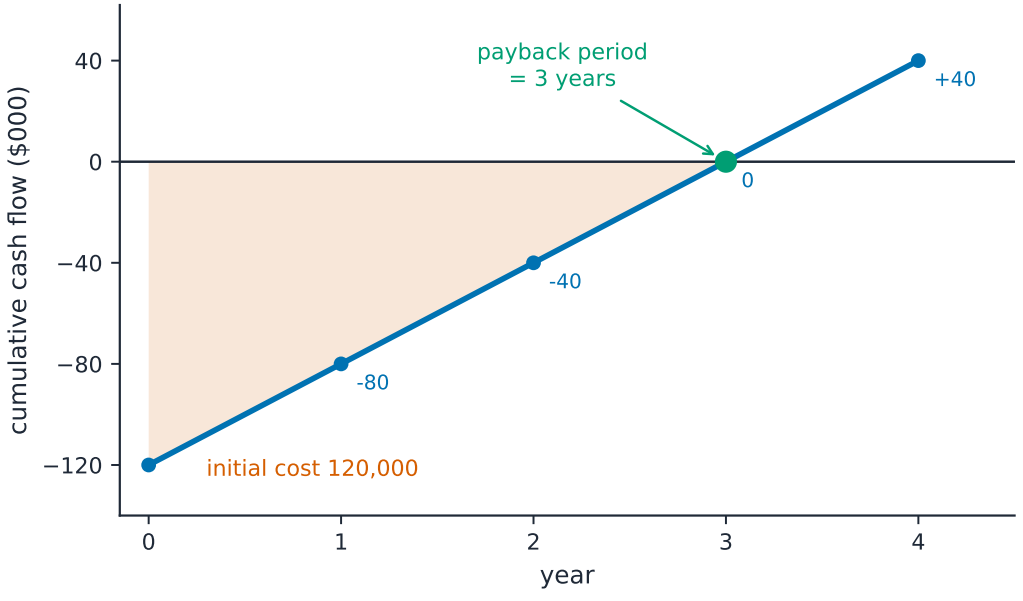
A business can deal with a cash flow problem in three ways:

Approach	Examples	Drawback
reduce cash outflows	delay buying new equipment; lease instead of buy; ask suppliers for longer credit	old equipment may break; suppliers may refuse
improve cash inflows	ask customers to pay faster; offer a discount for paying cash; sell old stock	discounts lower profit; customers may go elsewhere
find more finance	overdraft; short-term loan; sell an asset	interest costs; the asset may be needed later

Investment, profit and cash flow are linked. A new workshop uses a lot of cash now and earns profit only later, so even a good investment can cause a cash shortage in its first months.

Investment appraisal

Investment appraisal checks whether a capital project is worth its cost. The repair business plans a third workshop. It costs 120,000 and should bring in a net cash flow of 40,000 a year for four years.



The third workshop pays back its 120,000 cost after exactly three years

The **payback period** is the time a project takes to earn back its cost.

After three years the workshop has earned $3 \times 40{,}000 = 120{,}000$, so the payback period is 3 years. If the cash flow is not the same each year, add the years until the total covers the cost, then work out the part year: $\text{months} = \dfrac{\text{amount still needed}}{\text{cash flow in that year}} \times 12$. Payback is simple and shows risk, because money that comes back sooner is safer. It ignores everything that happens after the payback date.

The **average rate of return** (ARR) is the average yearly profit as a percentage of the cost.

$$\text{ARR} = \frac{(\text{total returns} - \text{capital cost}) \div \text{years of use}}{\text{capital cost}} \times 100 = \frac{(160{,}000 - 120{,}000) \div 4}{120{,}000} \times 100 = 8.3\%$$

ARR uses all the years of the project and can be compared with the interest rate on a loan. It ignores timing: 40,000 received in year 4 is treated the same as 40,000 received in year 1.

Checklist

- Capital and revenue expenditure; internal sources (personal funds, retained profit, sale of assets) and eight external sources; short, medium and long term; matching the source to the need (3.1–3.2).
- Fixed, variable, semi-variable, direct and indirect costs; total revenue and revenue streams (3.3).
- The income statement from sales revenue 600,000 to retained profit 40,000; the statement of financial position with net assets and equity of 200,000; who reads the accounts (3.4).
- Gross profit margin 40%, profit margin 15%, ROCE 25%; current ratio 2.0, acid test 1.25; ways to improve each (3.5).
- Profit against cash flow; the working capital cycle; the January–June forecast with its −5,000 in April; three ways to fix a cash problem (3.7).
- Payback 3 years, ARR 8.3%; what each method can and cannot show (3.8).

Paper 2 tests the calculations: write the formula, put in the numbers and give the answer with its unit, then say what it means for the business. Paper 1 asks about sources of finance and cash flow in the case-study business. All numbers here are original.