



Accounting Basics February 2015

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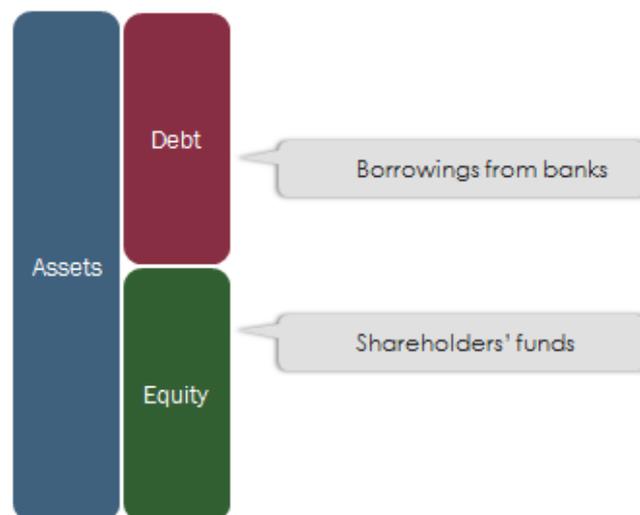
1 Basics of Business Finance

1.1 What Do We Need to Know About a Business?

- How is the business funded?
- What has the money been used for?
- How much profit does it make?
- Is it worth the effort?

1.2 How is a Business Funded?

Companies are usually funded by a mixture of their shareholders' money and money borrowed from banks.



1.2.1 Shareholders

Shareholders provide long-term capital by buying shares in the business. In exchange for their money, they become owners of the business and will therefore share in the fortunes of the company. The shareholders' investment in the company or shareholders' funds is also known as the equity. Money put in by the shareholders like this is called share capital. From the company's perspective, this capital is money borrowed and therefore owed back to the shareholders (a liability). However, it never has to be repaid unless the company is wound up, which is rare. Equity is therefore thought of as permanent capital.

1.2.2 Shareholders' Rights

The shareholders, as owners of the business, have certain rights:

- They get to vote on the composition of the board of directors.
- The directors must send a report to the shareholders each year, detailing what they have been doing with the shareholders' money (the annual report).
- The profits of the business after interest and tax belong to the shareholders. Some of the profit may be paid in cash to the shareholders by way of dividends and the rest will be reinvested in the business on the shareholders' behalf (retained profit or reserves).
- There must be an annual meeting for shareholders, at which the annual report and dividends are formally approved (the Annual General Meeting, or AGM).

1.2.3 Shareholders' Expectations

Shareholders also have expectations. They will expect a reasonable return on their investment.

- This may be by way of dividends, which are a bit like interest, usually paid six-monthly, depending on the level of profits, at the directors' recommendation. Dividends are not contractual, so companies have no obligation to pay dividends at all.
- Shareholders may also make a capital profit because the value of their shares increases. Of course, capital gains are notional until the shares are actually sold and the profit is crystallized.

1.2.4 Banks and Other Lenders

Banks and other lenders also provide capital to companies – called loan capital, debt or borrowings. Characteristics of debt:

- Money lent to the business must be repaid according to the agreed schedule.
- Interest is a contractual obligation.
- The lender may require collateral/security, such as a legal charge over the assets.

Overall, debt is less flexible than equity. However, lenders do not have ownership rights and so have no say in how the business is managed (unlike the shareholders, who can choose the board).

1.3 What is the Money Used For?

1.3.1 Capital Expenditure

The money can be invested in facilities etc. to be used in the business, such as:

- Premises
- Vehicles
- Plant and machinery
- Computers

These are all assets which will be used in the business over a number of years. The decision to invest is a strategic decision. These assets are known as fixed assets or sometimes capital assets. The money spent on fixed assets is called capital expenditure (or capex).

Capital expenditure is not treated as an immediate business expense for accounting purposes. The idea is that the assets will benefit the business over a number of years, so the cost of fixed assets is spread against profits over their expected useful life. The accounting mechanism for achieving this is called depreciation.

1.3.2 Revenue Expenditure

Money can also be invested in products, services and materials to be sold:

- Materials
- Labour
- Insurance
- Maintenance

These investments are continually changing. The decision to invest is an operational decision and the investment is called working capital, revenue expenditure or operating expenditure. For accounting purposes, the amounts spent on revenue items are deducted from profits straight away.

1.4 Summary so Far

- All money in the company belongs to someone else.
- The capital must be raised in the first place, from shareholders and/or the bank.
- Subsequently the investors will expect a return on their investment (interest or dividends/capital growth).
- There is no free money.
- All expenditure must be planned, controlled and justified.
- Expenditure can either be in the form of assets (capex) or expenses deducted from profits (revenue or operating expenditure).

1.5 How Much Profit Does the Business Make?

The reason for setting up a business is usually to make a profit. You make a profit when sales exceed costs.

Sales and expenses are recorded on an earned and incurred basis rather than on a received and paid basis. For example, on a personal level, let's assume that you earn 3,000 per month and that today is the middle of the month. So far this month you have *earned* half a month's salary (1,500) and yet you will not actually receive any of it until the end of the month. Your personal income statement for the period 1st – 15th of the month will show 1,500 salary as revenue, but your cash flow (or bank statement) for the same period will show that you have received zero during the month to date.

Accountants talk about different levels of profits – gross profit, operating or trading profit, profit before tax, net profit etc.

Example Income Statement (Profit & Loss Account)

INCOME STATEMENT		
REVENUE	100,000	Sales revenue earned during the period Volume x price (eg 100,000 units @ 1)
- COST OF SALES	<u>-50,000</u>	Cost of goods sold (eg 100,000 units @ 0.50)
= GROSS PROFIT	50,000	
- OPERATING EXPENSES	-35,000	
- RESTRUCTURING COSTS	<u>-1,000</u>	
= OPERATING PROFIT	14,000	Profit from what the business does after all operating expenses (opex)
-INTEREST	<u>-1,500</u>	Cost of financing debt (borrowed money)
= PROFIT BEFORE TAX	12,500	
-TAX	<u>-2,500</u>	
= NET PROFIT	<u>10,000</u>	What's left for shareholders Earnings per share (EPS) is calculated here = net profit/number of shares

1.5.1 Gross Profit

Gross profit is the revenue less the direct cost of goods sold (cost of sales). Cost of sales varies slightly from company to company, but usually includes the cost of production or manufacturing. Costs below the gross profit level are often referred to as “overheads”.

1.5.2 Operating Profit

Operating profit is the profit on the company’s operations – ie on what it does:

- Before the cost of financing (interest and dividends)
- And before tax (which is largely beyond the business’s control)

Operating profit is also known as:

- Operating income
- Trading profit
- Profit before interest and tax (PBIT)
- Earnings before interest and tax (EBIT)

1.5.3 How Operating Profits are used

First the banks take their share - the interest owed on the money the business has borrowed. The amount will depend on the level of borrowings and the interest rate charged by the bank. Profit after the interest has been taken out is called profit before tax.

Profit before tax is known as:

- PBT
- Pre-tax profit
- Income before tax
- Earnings before tax (EBT)

After the banks, the tax authorities take their share. Of course, tax rates vary from country to country.

Profit after tax is known as:

- PAT
- Earnings after tax (EAT)
- Net profit
- Net income
- Profit attributable to the shareholders

After interest and tax, the remaining profit belongs to the shareholders. The directors decide how much should be paid out by way of dividend and how much should be reinvested in the business on the shareholders' behalf. The amount reinvested is known as

- Retained profit
- Retained earnings
- Reserves

Jargon Summary

INCOME STATEMENT	
REVENUE	100,000
- COST OF SALES	<u>-80,000</u>
= GROSS PROFIT	20,000
- OPERATING EXPENSES	-14,000
- RESTRUCTURING COSTS	<u>-1,000</u>
= OPERATING PROFIT	5,000
-INTEREST	<u>-1,000</u>
= PROFIT BEFORE TAX	4,000
-TAX	<u>-1,000</u>
= NET PROFIT	<u>3,000</u>

- Turnover
- Sales
- Top line

- Gross margin
- Contribution

- Trading profit
- EBIT
- PBIT
- Operating income

- Pre-tax profit
- EBT/PBT
- Income before tax

- Profit after tax
- Attributable profit
- Net income
- Bottom line

1.5.4 Adjusted Profit

When we are assessing profitability, we usually want to see where the business is likely to go in future – i.e. the trend in profits. The trend is sometimes distorted by one-off profits or losses that have nothing to do with underlying trading, so it is often helpful to look at profits excluding these unusual items.

Adjusted Operating profit (EBIT)

INCOME STATEMENT	
REVENUE	100,000
- COST OF SALES	<u>-50,000</u>
= GROSS PROFIT	50,000
- OPERATING EXPENSES	-35,000
- RESTRUCTURING COSTS	<u>-1,000</u>
= OPERATING PROFIT	14,000
-INTEREST	<u>-1,500</u>
= PROFIT BEFORE TAX	12,500
-TAX	<u>-2,500</u>
= NET PROFIT	<u>10,000</u>

Includes one-off items of 1,000 (cost)
 Profit before unusual items is 15,000
 (= underlying/adjusted operating profit)

Examples of one-off items:

- Profits or losses from selling assets or a business
- One-time reorganisation costs
- One-off litigation costs

Adjusted profit is also referred to as “underlying” or “business as usual (BAU)” or “normalised profit”.

1.5.5 Depreciation and Amortisation

When a business spends money on a capital asset, the cost is not deducted from profits immediately as an expense. If it were, a business’s profits would be very lumpy – high in years of low capital expenditure and low in years of high capital expenditure. So, to make profits smoother and show the trend in profitability, the cost of capital assets is spread over their expected useful life. The mechanism for doing this is called depreciation.

Sometimes companies have assets that are intangible, rather than tangible. These assets are said to amortise, rather than depreciate. The principles of amortisation are, however, exactly the same as those for depreciation – the idea is to spread the cost of the asset against profits over the period that is estimated to benefit from its use.

Example:

You buy a second hand car for 5,000
 You estimate its useful life - 5 years, with no scrap value

Each year, for accounting purposes, you would reduce the value of the car by 1,000 and reduce your profits by 1,000. This would have the effect of spreading the cost of the car against profits over 5 years (in this case, on the basis of equal annual installments).

Companies can choose their own depreciation rates and methods, so the profit after depreciation (which is operating profit) is somewhat subjective. Also, depreciation guidelines are very different in different countries. Many users of accounts think it is better to compare companies in the same industry using profit before depreciation (ie operating profit with the depreciation added back). This is known as Earnings before interest, tax, depreciation and amortisation (EBITDA).

Calculating EBITDA and Adjusted EBITDA

INCOME STATEMENT	
REVENUE	100,000
- COST OF SALES	-50,000
= GROSS PROFIT	50,000
- OPERATING EXPENSES	-35,000
- RESTRUCTURING COSTS	-1,000
= OPERATING PROFIT	14,000
-INTEREST	-1,500
= PROFIT BEFORE TAX	12,500
-TAX	-2,500
= NET PROFIT	10,000

Includes depreciation & amortisation 4,000

Includes depreciation & amortisation 1,000

Includes one-off items of 1,000 (cost)
Profit before unusual items is 15,000
(= underlying/adjusted operating profit)

EBITDA = 14,000 + 4,000 + 1,000 = 19,000
Adjusted EBITDA = 15,000 + 4,000 + 1,000 = 20,000

1.6 Is it Worth it?

Some important concepts:

1.6.1 Risk and Return

The more risk an investor takes, the more return he/she will expect. For example, investors expect a higher overall return from shares than from bank deposits. By the same token, shareholders in more risky companies will expect a higher return than those in less risky companies.

1.6.2 Opportunity Cost

Opportunity cost is one of the most important concepts in economics. To justify investing money in an activity, it must earn at least as much as it could earn if used elsewhere. For example, a shareholder has a choice. He/she can either invest in this particular business or a range of other businesses with similar risk characteristics. The shareholder will therefore judge the performance of the business against opportunity cost – what the money could have earned in an alternative investment with similar risk.

1.6.3 Shareholder Value

The accounting profit tells us that the income exceeded the expenses. However, it does not tell us whether the business is worthwhile. Take a business that is forecast to make profits of 10m. Imagine that the shareholders and lenders will have to invest 100m between them to achieve this. The business looks like a reasonably good investment – it is making a return on the capital of 10%. We can measure this against the approximate return the investors expect, which might be around 7.5% (we call this expected return the “cost of capital”).

But if the business requires 200m of capital invested, then the return would only be 5% - probably not a high enough return to compensate the investors for the risk they are taking.

So, to measure whether a business is generating a profit that makes it a worthwhile investment for the investors, we need to measure the profit as a percentage of the capital invested. Then we can compare with the investors’ opportunity cost. This ratio is called return on capital employed (ROCE) or return on invested capital (ROIC) or return on investment (ROI). The calculation is broadly operating profit as a percentage of the capital (debt + equity). If the return is higher than the investors’ expectations, the business is generating what is known as an economic profit (not just an accounting profit). If the return is lower than the investors’ expectations then the business is making an economic loss. Economic profits will tend to enhance shareholder value, whereas economic losses will tend to destroy it.

Shareholder Value Summary

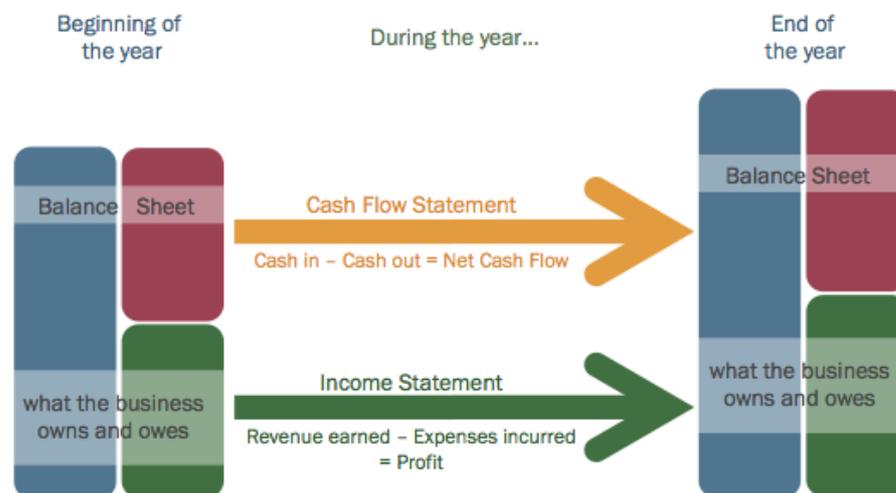


2 Accounts and Accounting

2.1 What is Accounting?

Accounting produces a model of the business that shows

- The financial position at the beginning and end of each period (a balance sheet).
- The profit or loss generated by the business during the period (a profit and loss account).
- The cash generated or spent by the business during the period (a cash flow statement).



The model is designed to record the past, but people often try to use it to predict the future. Most models have a tendency to over-simplify things and the accounting model is no exception.

2.2 Double Entry Book-keeping

The accounting system is based on double entry book-keeping. The earliest known work on this system was by Lucas de Burgo in 1494, but there is evidence of similar records that can be traced back to the introduction of barter (using notched sticks or chalk marks on a handy rock).

In the 15th century, the great mercantile cities of northern Italy adopted the principles of double entry and from here, the system made its way over Europe, appearing in England about the beginning of the 17th century. The idea is that everything is recorded twice (as a debit and a credit), by considering both the giving and receiving involved in a transaction. The accounts will then always balance, which makes them to some extent self-checking.

2.3 The Problem of Intellectual Capital

As you can imagine, therefore, the system was invented and intended for businesses which owned tangible assets (assets you can touch). Today, many more businesses are founded on intellectual capital rather than physical assets and there is no mechanism for including the value of such intangible assets in the accounts.

2.4 Historic Asset Values

Around most of the world, assets are recorded in the accounts at historic cost, so there may be significant hidden value in assets such as land and buildings. However, under some accounting systems, assets such as investments and investment properties are revalued annually to market value.

2.5 Regulation of Published Accounts

2.5.1 The Law

In most countries, the law dictates the formats and much of the content of company accounts. The overriding concern of the law is that the accounts show a true and fair view. The law usually also requires that the accounts of all but the smallest companies are audited.

2.5.2 Accounting Standards

Companies must follow various rules on how to prepare their financial statements, known as accounting standards. Compliance with accounting standards is required for the accounts to show a true and fair view. In Europe and many other countries, listed companies are required to produce accounts to International Financial Reporting Standards (IFRS). IFRS is set by the International Accounting Standards Board (IASB). Each standard is subject to wide public consultation in draft form before being adopted.

The USA currently has its own set of accounting standards, known collectively as US Generally Accepted Accounting Principles (US GAAP), published by the Financial Accounting Standards Board (FASB). For the past several years, the IASB and the US FASB have been working together to achieve convergence of IFRS and US GAAP. The ultimate goal is a single set of high-quality global accounting standards as an important means of enhancing comparability for investors.

The objective of accounting standards is to harmonise accounting and disclosure levels so that the financial statements of different companies in different countries can be compared. However, some accounting standards allow choices in the treatment of items in the accounts, which on the one hand allows companies to reflect better their businesses, but on the other sometimes makes it difficult to draw valid comparisons.

2.5.3 Auditors

Auditors are appointed by the shareholders to report on the directors' stewardship of their money. The auditors are normally required to report on:

- Whether the accounts comply with the legislation and
- Whether, in their opinion, the accounts show a true and fair view.

2.6 Summary of Problems with Accounting

- Intellectual capital/intangible assets are not reflected in the balance sheet – the amounts spent to create such assets are treated as an expense in the accounting model. The model is increasingly out of date – it does not work very well for companies with brands, skills etc.
- Asset values are usually historic. Long-term assets are included at purchase price less depreciation (although property is revalued in investment property companies). Stock/inventory is included at cost not selling price. So the accounts are often conservative in terms of value.
- Standard accounting policies sometimes allow choices, which means that different companies treat similar items in different ways.

3 Financial Statements

3.1 Balance Sheet or Statement of Financial Position

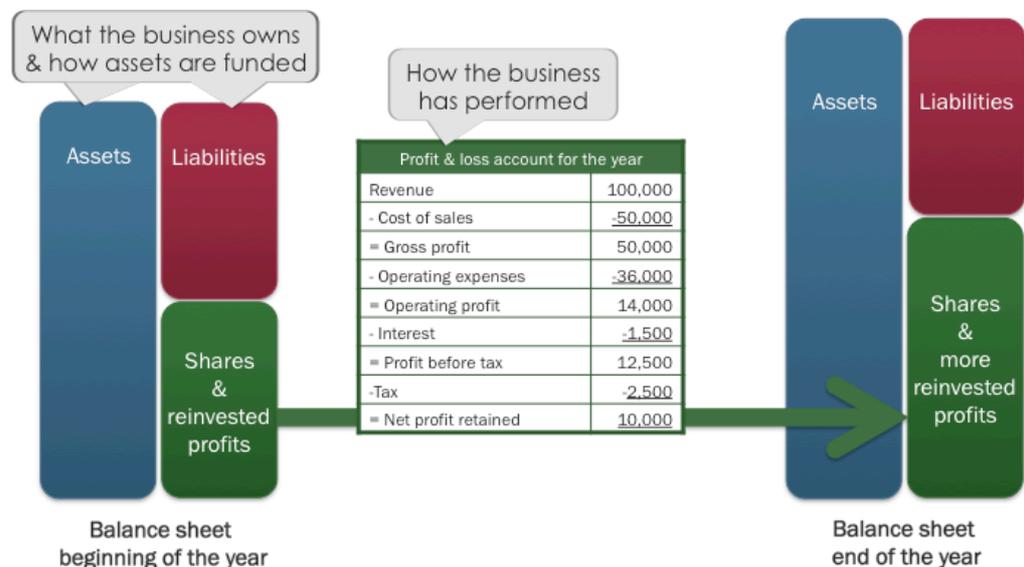
The balance sheet shows the assets owned and the liabilities owed at a point in time (usually the end of a company's financial year).

Assets and liabilities are split between non-current and current assets. Non-current assets are assets that will be used in the business over a number of years. Current assets typically turn into cash within one year. Likewise, non-current liabilities are amounts owed that do not need paying until after more than one year (eg a 10 year bank loan). Current liabilities are owed amounts that will be paid within one year (eg overhead payables and overdrafts).

3.2 Profit and Loss Account or Income Statement

The profit and loss account shows the income earned over the period, less the expenses incurred over the same period and how they combine to make a profit or a loss.

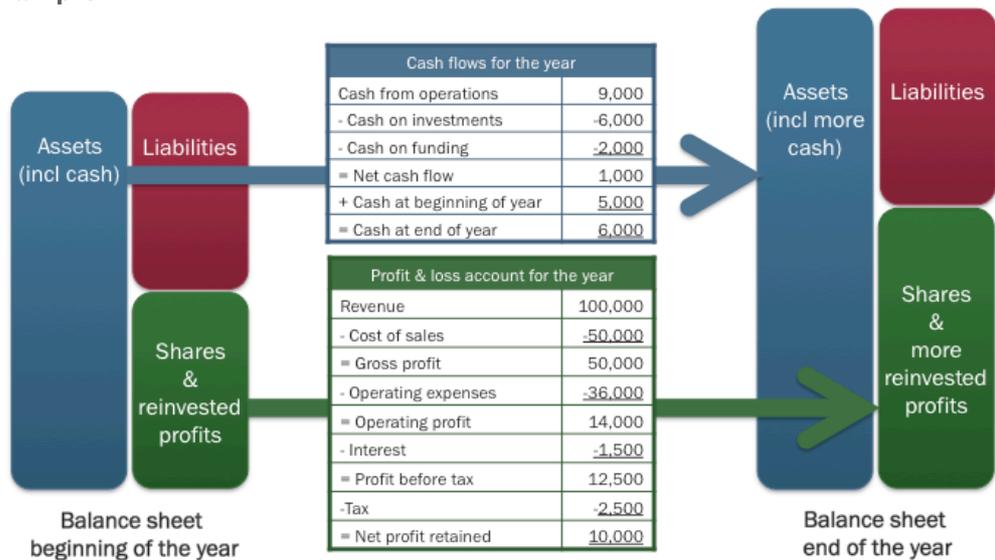
3.3 How the Balance Sheet & Income Statement Fit Together



3.4 Cash Flow Statement

The cash flow statement shows the cash received and the cash paid out during the year and explains how come we had more or less cash at the end of the year, than we had at the beginning. It's like looking at your own bank statement.

Example:



3.5 Another Problem with Accounting

The measurement of profit is subjective. Remember, it is the earned income less the incurred expenses, not the income received less the expenses paid. Sometimes the estimation of the income earned is wrong (for example, when a customer does not pay).

3.6 The Accounting Equation

Most companies in Europe arrange their balance sheets so that assets are balanced by liabilities and equity as per the example below:

BALANCE SHEET		
Assets	2015	2014
Property, plant & equipment	101,000	100,000
Inventories	25,000	20,000
Receivables	28,000	25,000
Cash	6,000	5,000
Total assets	160,000	150,000
Liabilities & Equity		
Payables	27,000	25,000
Loans	28,000	30,000
Total liabilities	55,000	55,000
Share Capital	25,000	25,000
Retained Profits	80,000	70,000
Equity (Shareholders' funds)	105,000	95,000
Total liabilities & equity	160,000	150,000

You can see that total assets here for 2015 are 160,000 and this is balanced by total liabilities of 55,000 plus equity of 105,000.

Non-current assets + current assets = total liabilities + shareholders' funds.

In the US, companies use the same format, but the assets are usually in order of liquidity, with cash at the top:

BALANCE SHEET		
Assets	2015	2014
Cash	6,000	5,000
Receivables	28,000	25,000
Inventories	25,000	20,000
Property, plant & equipment	101,000	100,000
Total assets	160,000	150,000
Liabilities & Equity		
Payables	27,000	25,000
Loans	28,000	30,000
Total liabilities	55,000	55,000
Share Capital	25,000	25,000
Retained Profits	80,000	70,000
Equity (Shareholders' funds)	105,000	95,000
Total liabilities & equity	160,000	150,000

In the UK however, most balance sheets are prepared from the perspective of the shareholders:

Assets – liabilities (net assets) = shareholders’ funds (equity)

In our example, you can see below that assets of 160,000 less liabilities of 27,000 and 28,000 (i.e. net assets 105,000) would be balanced by equity of 105,000.

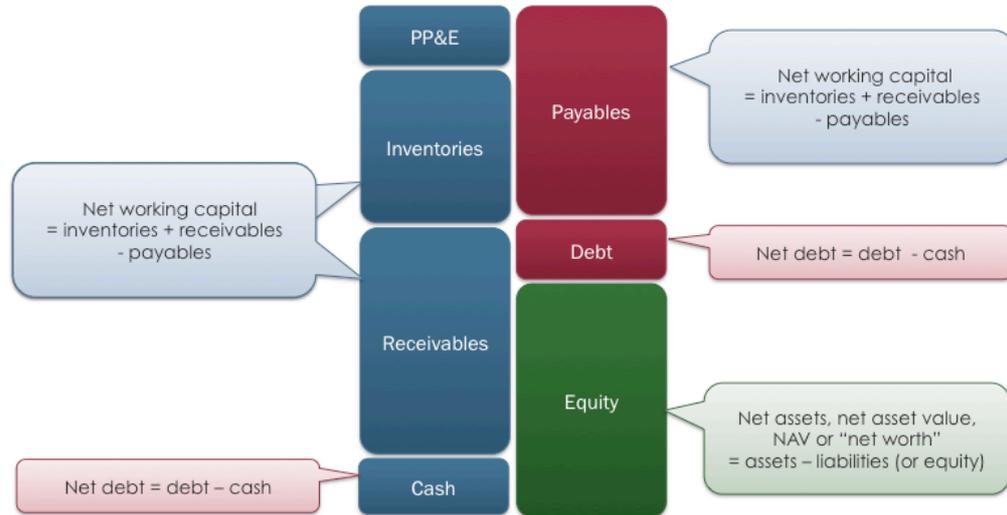
BALANCE SHEET		
Assets	2015	2014
Property, plant & equipment	101,000	100,000
Inventories	25,000	20,000
Receivables	28,000	25,000
Cash	6,000	5,000
Total assets	160,000	150,000
Payables	-27,000	-25,000
Loans	-28,000	-30,000
Net assets	105,000	95,000
Share Capital	25,000	25,000
Retained Profits	80,000	70,000
Equity (Shareholders’ funds)	105,000	95,000

3.7 Summary

- Businesses are funded by shareholders (equity) and banks (debt). Equity is more flexible, as dividends are optional and the capital does not have to be repaid.
- The money is used for capital expenditure (new fixed assets) and working capital or revenue expenditure.
- The operating profit is the profit that the business makes, before taking into account interest, tax and dividends. The measurement of profits is subjective.
- The business is worthwhile when it generates an economic profit. The accounting profit is simply the earned income less the incurred expenses. It does not take into account the cost of the company’s capital. Economic profit is the profit after taking into account the returns that the investors expect (the cost of capital).

4 Terminology and Analysis

4.1 Balance Sheet Definitions



4.1.1 Working Capital

Working capital is receivables plus inventories less payables. Some companies also include cash in their working capital. Working capital is the money invested in things that change in the business on a day-to-day basis.

4.1.2 Net Debt

Net debt is loans less cash. The idea is that you could use your cash to pay off your loans if you wanted. So it makes sense to look at the net position. If a company has more cash than loans then it has "net funds" rather than "net debt".

4.1.3 Capital & Assets Employed

Capital employed measures the capital (funding) used to fund the assets: the net debt plus the equity.

Assets employed is a measure of the assets being used in the business: the non-current assets (PP&E) and the net current assets (working capital).

Not surprisingly, because the balance sheet balances, these are two ways of getting to the same number.

4.2 Balance Sheet Example

BALANCE SHEET	
Assets	2015
Property, plant & equipment	101,000
Inventories	25,000
Receivables	28,000
Cash	6,000
Total assets	160,000
Liabilities & Equity	
Payables	27,000
Loans	28,000
Total liabilities	55,000
Share Capital	25,000
Retained Profits	80,000
Equity (Shareholders' funds)	105,000
Total liabilities & equity	160,000

In the balance sheet above, the net working capital is:
 $\text{Inventories } 25,000 + \text{receivables } 28,000 - \text{payables } 27,000 = 26,000.$

Net debt for 2015 is:
 $\text{Loans } 28,000 - \text{cash } 6,000 = 22,000.$

Capital employed is either net debt plus equity:
 $\text{Net debt } 22,000 + \text{equity } 105,000 = 127,000$

Or non-current assets plus net working capital:
 $\text{Property, plant and equipment } 101,000 + \text{net working capital } 26,000 = 127,000.$

When calculating return on capital employed, companies often use average capital employed, being the average of the working capital at each year-end.

4.3 Impact of Changing Sales Volumes and Prices

This example below shows you the impact of changes in revenue on profit.

INCOME STATEMENT					
	Period 1	Period 2	Period 3	Period 4 Price -20%	Period 4 Vol -20%
Revenue	39,000	45,000	54,000	43,200	43,200
Cost of goods sold	<u>-26,000</u>	<u>-30,000</u>	<u>-36,000</u>	<u>-36,000</u>	<u>-28,800</u>
Gross profit	13,000	15,000	18,000	7,200	14,400
Depreciation	-1,000	-1,000	-1,000	-1,000	-1,000
Other operating costs	<u>-6,000</u>	<u>-8,000</u>	<u>-8,000</u>	<u>-8,000</u>	<u>-8,000</u>
Operating profit	6,000	6,000	9,000	-1,800	5,400
Interest	<u>-1,000</u>	<u>-1,000</u>	<u>-1,000</u>	<u>-1,000</u>	<u>-1,000</u>
Net profit	<u>5,000</u>	<u>5,000</u>	<u>8,000</u>	<u>-2,800</u>	<u>4,400</u>

Here is a different company example, showing the income statements for periods 1 to 3. We are going to look at two possible scenarios for period 4. In period 3, we had revenue of 54,000, made up of 36,000 units at a selling price of 1.50 each. The units were purchased for 1.00 each.

In the first scenario, price is cut by 20% (to 1.20) but volumes remain the same. Revenue falls by 10,800 to 43,200 (36,000 x 1.20). All costs remain the same and so net profit falls by the same amount - i.e. the full impact of the price reduction comes straight through to the bottom line. Similarly if sales price were to increase, the extra revenue would fall straight through to the bottom line as additional profit.

In the second scenario, volumes are cut by 20% but the price remains the same. Again, revenue falls by 10,800 to 43,200 (28,800 units x 1.50). However this time, because there is less volume, the cost of goods sold is also lower (28,800 units x 1.00). All other costs remain the same and you can see that the 20% fall in sales volume has resulted in a 45% drop in net profit. The impact on the bottom line is magnified because some of the costs are fixed (i.e. they don't vary with volume). In this example, depreciation, other operating costs and interest did not change when volumes fell.

When a company has high fixed costs it is said to have "high operational leverage" (or "high operational gearing"). A company with high operational leverage (high fixed costs) will find that profits will be very sensitive to changes in sales volume - i.e. profits will tend to be more volatile than a company with low operational leverage. The operational leverage will vary from company to company and is something to think about when you are interpreting ratios.

4.4 Ratios

You can use ratios to help understand financial performance. Some ratios just use the income statement (e.g. profit margins) and some use the income statement and balance sheet together.

There is more than one way to calculate most ratios. For example, as we have said, return on capital employed is sometimes calculated using the average capital employed rather than the year-end number, in which case it may be called return on average capital employed (ROACE).

Example Balance Sheet & Income Statements

BALANCE SHEET		
	2015	2014
Assets		
Property, plant & equipment	101,000	100,000
Inventories	25,000	20,000
Receivables	28,000	25,000
Cash	6,000	5,000
Total assets	160,000	150,000
Liabilities & Equity		
Payables	27,000	25,000
Loans	28,000	30,000
Total liabilities	55,000	55,000
Share Capital	25,000	25,000
Retained Profits	80,000	70,000
Equity (Shareholders' funds)	105,000	95,000
Total liabilities & equity	160,000	150,000

INCOME STATEMENT		
	2015	2014
Revenue	110,000	100,000
- Cost of sales	-56,000	-50,000
= Gross profit	54,000	50,000
Operating expenses	-41,000	-35,000
+/- One-off items	+1,000	-1,000
= Operating profit	14,000	14,000
+/- Interest	-1,500	-1,500
= Profit before tax	12,500	12,500
Tax	-2,500	-2,500
= Net profit	10,000	10,000

4.4.1 Year on Year Increases and Profit Margins

Of course year on year increase or decrease will show whether or not the business has grown and this can be interpreted in the light of general economic growth and sector growth. A profit margin is profit as a % of revenue. It shows on average how much profit the company makes per 100 of sales.

Example Calculations

INCOME STATEMENT					
	2015	2014	YOY increase	2015 margin	2014 margin
Revenue	110,000	100,000	10.0%	100.0%	100.0%
- Cost of sales	<u>-56,000</u>	<u>-50,000</u>	12.0%	-50.9%	-50.0%
= Gross profit	54,000	50,000	8.0%	49.1%	50.0%
- Operating expenses	<u>-41,000</u>	<u>-35,000</u>	17.1%	-37.3%	-35.0%
= Underlying EBIT	13,000	15,000	-13.3%	11.8%	15.0%
+/- One-off items	<u>+1,000</u>	<u>-1,000</u>	N/A	0.9%	-1.0%
= Operating profit	14,000	14,000	0%	12.7%	14.0%
+/- Interest	<u>-1,500</u>	<u>-1,500</u>	0%	-1.4%	-1.5%
= Profit before tax	12,500	12,500	0%	11.4%	12.5%
- Tax	<u>-2,500</u>	<u>-2,500</u>	0%	-2.3%	-2.5%
= Net profit	10,000	10,000	0%	9.1%	10.0%

In this example, you can see the following key points:

- Revenue has grown 10% but operating profit has not grown at all
- Underlying EBIT (excluding one-off items) has actually fallen 13%
- The operating profit margin on an underlying basis has fallen from 15% in 2014 to 11.8% in 2015, meaning that sales are now less profitable on average. This is partly due to a lower gross profit margin (possibly as a result of higher costs or lower selling prices) and partly due to operating expenses growing at a faster rate than revenue (revenue grew by 10% but opex was up by just over 17%, suggesting possible cost control problems).

4.4.2 Return on capital employed (ROCE)

ROCE measures how much profit the business is making for every \$/£/€ invested - i.e. it is a measure of return on investment. The calculation is operating profit as a % of the capital (or assets) used in the business.

As calculated before, capital employed is net debt plus equity:
 Net debt 22,000 + equity 105,000 = 127,000

ROCE for 2015 was
 Underlying EBIT 13,000/capital employed 127,000 x 100 = 10.2%.

4.4.3 Leverage (or Gearing)

Financial leverage (or gearing) measures the strength of the balance sheet. The lower the ratio, the stronger the balance sheet.

Typically leverage is measured as net debt/total capital (net debt + equity) or net debt/equity %

Here, leverage (net debt/total capital) is $22,000/(22,000 + 105,000) \times 100 = 17\%$.

Leverage is very low here - only 17% of total capital is debt. The majority is equity which doesn't have to be repaid and on which dividends are optional - i.e. a strong balance sheet. In general, leverage (net debt to total capital) of 50% or more would be considered high.

Another way of looking at leverage would be to consider the affordability of interest payments - interest cover. This is calculated as operating profit/net interest payable and it shows how many times the profit covers interest payments.

For 2015, underlying EBIT was 13,000 and net interest payable was 1,500. Interest was therefore covered 8.7 times by profits, which suggests that were profits to fall a bit or interest rates to rise, the company should still be able to afford its interest payments.

Finally, leverage can also be calculated by reference to EBITDA. EBITDA is the profit before depreciation (a non-cash expense) so it is closer to a cash flow measure than operating profits. Net debt/EBITDA gives an indication of how many years' cash flows it would take to repay debt in full.

Assuming underlying (or adjusted) EBITDA for 2015 is 17,000, net debt/EBITDA is: $22,000/17,000 = 1.3$.

This suggests that it would take less than 1.5 years to repay existing debt from the company's annual cash flows - i.e. leverage is low.

5 Summary

The three key financial statements are:

- Balance sheet (statement of financial position) – shows everything you own and owe at a moment in time (a static statement)
- Income statement (profit or loss account) – shows revenues earned less expenses incurred during the period (a dynamic statement)
- Cash flow statement – shows revenues received less expenses paid in cash by the business during the period (another dynamic statement).

Balance sheets show:

- Non-current assets (in the business for more than one year)
- Net working capital (inventories + receivables – payables)
- Net debt (debt – cash) and
- Shareholders' funds (equity)

Having high net debt compared to equity shows a riskier, highly financially leveraged (geared) balance sheet.

Income statements show:

- Revenues
- Gross profit (revenue – cost of goods sold)
- Operating profit (gross profit – opex)
- Profit before tax (operating profit – interest)
- Net profit (profit before tax – tax)

Having high fixed costs compared to variable costs shows a more volatile, highly operationally leveraged (geared) income statement.

Cash flow statements show different results to the income statement due to:

- Capex (reducing cash) v opex (reducing profits)
- Depreciation and amortization (reducing profit but has no effect on cash)
- Working capital movements (impact cash but have no effect on profits).

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