Edexcel

AS Level

BS

(Code: WEC13 01)

Unit 02

Financial planning

Chapter 29 – Sales, revenue costs

SALES VOLUME

The output produced by businesses is eventually sold. Businesses measure and monitor sales levels. One approach is to measure the sales volume. This is the number of units sold by a business. However, depending on the nature of the business, sales volume can be measured in different ways. Some examples are illustrated in Table 1.

Type of business	How sales volume is measured
Cereal farmer	Tonnes of wheat sold
Car manufacturer	Number of cars sold
Airline	Number of passengers carried
Oil company	Barrels of oil sold
Haulage business	Number of miles travelled
Hotel	Number of rooms let
Driving instructor	Number of hourly lessons given
Insurance company	Number of policies sold
Music tutor	Number of hourly lessons given
Dairy farmer	Litres of milk sold
Power generator	Megawatt hours sold

▲ Table 1 Measuring sales volume

SALES REVENUE

Sales revenue is the value of output sold by a business. It may be calculated for a specific time period, such as a day, week, month or year. It can also be calculated for individual products when a business has a wide product range. Sales revenue, which is often called **total revenue**, is calculated using the following formula:

Sales revenue = Price x Quantity of output

BUSINESS COSTS

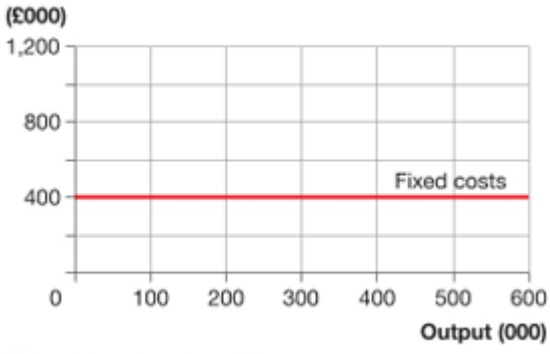
A business needs accurate and reliable cost information to make decisions. These might include wages, raw materials, insurance and rent.

It is important to understand how the costs of a business change in the **short run and the long run.**

- The short run is the period of time when at least one factor of production is fixed.
- In the long run, all factors can vary. The firm can buy another factory and add to the number of machines. This will increase capacity (the maximum amount that can be produced) and begin another short-run period.

FIXED COSTS

Costs that stay the same at all levels of output in the short run are called fixed costs. Figure 4 shows what happens to fixed costs as a firm increases production. The line on the graph is horizontal which shows that fixed costs are £400,000 no matter how much is produced. The firm is a doll manufacturer.



▲ Figure 4 Fixed costs of a doll manufacturer

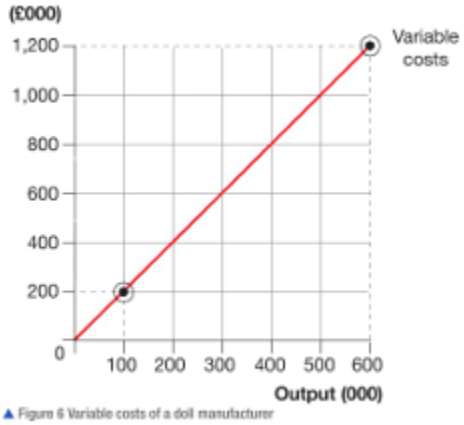
VARIABLE COSTS

Costs of production, which increase directly as output rises are called variable costs. For example, a baker will require more flour if more bread is produced. Raw materials are just one example of variable costs. Others might include fuel, packaging and wages. If the firm does not produce anything then variable costs will be zero.

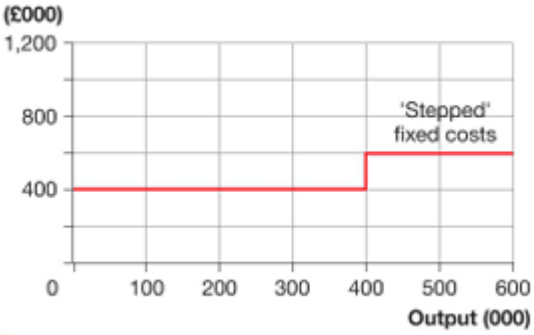
Figure 6 shows the variable costs of the doll manufacturer mentioned above. Variable costs are £2 per doll. If the firm produces 100,000 dolls it will have variable costs of £200,000 (£2 x 100,000).

Producing 600,000 dolls will incur variable costs of £1,200,000 (£2 x 600,000). Joining these points together shows the firm's variable costs at any level

of output. As output increases, so do variable costs. Notice that the graph is linear. This means that it is a straight line.



▲ Figure 6 Variable costs of a doll manufacturer

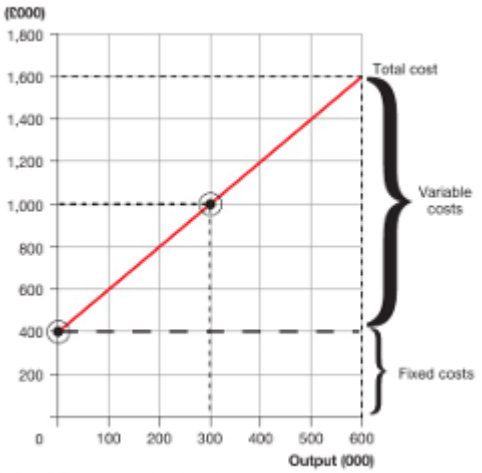


▲ Figure 5 Stepped fixed costs of a doll manufacturer

Finally, the equation for total variable cost is given by: TVC = Variable cost per unit x Output

TOTAL COST

If fixed and variable costs are added together they show the total cost of a business. The total cost of production is the cost of producing any given level of output. As output increases total costs will rise. This is shown in Figure 7, which again shows the production of dolls. We can say: Total cost (TC)= Fixed cost (FC) + Variable cost (VC) The business has fixed costs of £400,000 and variable costs of £2 per doll. When output is 0, total costs are £400,000. When output has risen to 300,000 dolls, total costs are £1,000,000, made up of fixed costs of £400,000 and variable costs of £600,000 (£2 × 300,000). When output is 600,000, total costs are £1,600,000, made up of fixed costs of £400,000 and variable costs of £1,200,000 (£2 × 600,000). Figure 7 shows the way that total costs increase as output increases. Notice that as output increases fixed costs become a smaller proportion of total costs.



▲ Figure 7 Total cost of a doll manufacturer

AVERAGE COST OR UNIT COST

The average cost is the cost per unit of production, also known as the unit cost. To calculate average cost, the total cost of production should be divided by the number of units produced, or output.

Average cost = Total cost Output

PROFIT AND LOSS

One of the main reasons why firms calculate their costs and revenue is to enable them to work out their profit or loss. Profit is the difference between revenue and costs.

Profit = Total revenue - Total costs

WAYS OF IMPROVING SALES VOLUME

Most businesses will be keen to improve sales volumes providing they have enough capacity. A number of approaches could be used, some of which are discussed briefly below.

Advertising: Businesses will tend to sell more output if they increase expenditure on advertising. The main aim of all methods of advertising is to increase sales volume. Different businesses and industries are likely to have their own preferred methods

Promotion: Businesses can choose from a wide range of different methods of promotion to help increase sales volumes. Examples might be coupons, sponsorship, free gifts, loyalty schemes, PR, merchandising or direct mailing. One very popular method used in supermarkets to increase sales volume is BOGOF offers. This type of offer might even double sales volumes for a period of time. The different methods of promotion are also discussed in detail in Chapter 11.

Improved targeting: Businesses are likely to increase sales volumes if their advertising and promotion is more targeted. That means that it should be aimed more accurately at the people who are most likely to purchase the product.

Extend product range: Another approach to increasing sales volumes is to increase the range of products for sale. One effect of this marketing strategy might be to persuade people who like sandwiches, but do not normally buy crisps, to make a purchase. This would help to increase sales volumes.

Extend distribution networks: If businesses are successful using one method of distribution, they might consider others to boost sales volumes. For example, an ever-increasing number of retailers are selling their goods online. In some cases, this enables businesses to sell to global markets. Such a move could have a very dramatic effect on sales volumes.

Develop relationships with customers: By engaging more with customers businesses might be able to improve customer retention and encourage repeat purchases. This would increase sales volumes. Ideally a business would want to attract a new customer and then keep them for life.

IMPROVING SALES REVENUE

Most of the methods discussed above to boost sales volumes can also help to raise sales revenue. For example, if a business increases sales volumes by 12 per cent after attending a trade fair, sales revenue may also rise by 12 per cent (assuming there is no change in price). However, businesses might use specific strategies to generate more sales revenue. Two additional methods can be identified.

Changing price: A change in price is likely to have an impact on sales revenue. Both a price increase and a price decrease might boost sales revenue. It depends on whether demand for a product is price elastic or price inelastic.

• Raising price. A business can increase revenue by raising price if demand is price inelastic. If PED =-0.8, a business can increase revenue by raising the price by 10 per cent even though sales volumes will actually fall by 8 per cent.

• Lowering price. A business can only increase revenue with a price cut if demand is price elastic. If PED = -2.4, a business can increase revenue by cutting the price by 10 per cent because demand rises by 24 per cent.

Adding complementary services or products: A business can generate more sales revenue if it can persuade customers to buy additional services or products that are related to the core product. For example, revenue might be increased if a:

- shoe retailer can also sell shoe-cleaning materials and other footwear accessories
- car dealer can also sell a credit agreement and warranties
- short-haul airline charges extra for preferred seats, travel insurance, food and beverages during the flight and carrying extra luggage
- computer retailer can also sell software, insurance and protection from malware and viruses
- garden-maintenance provider can also sell plants, fertilisers and more specialist garden services such as tree felling or garden design.

SUBJECT VOCABULARY

average cost or unit cost the cost of producing one unit, calculated by dividing the total cost by the output.
fixed cost a cost that does not change as a result of a change in output in the short run.
long run the time period where all factors of production are variable.
profit (loss) the difference between total costs and total revenue. It can be negative.
sales revenue the value of output sold in a particular time period. It is calculated by price × quantity of output.
sales volume the quantity of output sold in a particular time period.
semi-variable costs costs that consist of both fixed and variable elements.
short run the time period where at least one factor of production is fixed.
total cost the entire cost of producing a given level of output.
total revenue the amount of money the business receives from selling output.
variable costs costs that rise as output rises.

Chapter 30 - Sales forecasting

PURPOSE OF SALES FORECASTS

Generating an accurate **sales forecast** is one of the most important tasks for a business, and one that will directly affect its efficiency and success. Imagine a business that did not carry out any sales forecasting.

Forecasting is a business process, assessing the probable outcome using assumptions about the future. Forecasts may be based on a variety of data, for instance current information provided by managers. Most forecasts are based on data gathered from a variety of market research techniques. The accuracy of forecasts will depend on the reliability of the data.

Time series analysis: A variety of techniques can be used to predict future trends. One of the most popular is time series analysis. This involves predicting future levels from past data. The data used are known as time series data - a set of figures arranged in order, based on the time they occurred. For example, a business may predict future sales by analysing sales data over the last 10 years, as shown in Table 1.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Sales (US$ 000)	125	130	130	150	140	155	180	190	210	230

▲ Table 1 Yearly sales of a garden furniture manufacturer

Time series analysis does not try to explain data, only to describe what is happening to it or predict what will happen to it. There are likely to be four components that a business wants to identify in time series data.

• The trend. 'Raw' data can provide figures for many different things, and it may not always be easy to see exactly what is happening from these figures. Consequently, businesses often try to identify a trend. This shows the pattern that is indicated from the figures.

• Seasonal fluctuations (variations). Over a year a business is unlikely to have a constant level of sales. Seasonal variations are very important to certain businesses, such as ice cream producers or greetings card manufacturers, where there may be large sales at some times but not at others.

• Cyclical fluctuations. For many businesses there may be a cycle of 'highs and lows' in their sales figures over a number of years. These can be the result of the recession-expansion-recession of the trade cycle in the economy. In a recession, for example, people have less money to spend and so the turnover of a business may fall in that period.

• Random fluctuations. At times there will be surprising or unusual figures that stand out from any trend that is taking place. An example might be the sudden boost in sales of umbrellas in unusually wet summer months, or the impact on consumer spending of a one-off event, such as a summer music festival.

THE BENEFITS OF SALES FORECASTING

Using sales forecasts has some real advantages for businesses. In general it will help the business to plan ahead and avoid surprises. Having a clear idea of what sales will be in the next financial period provides a number of clear benefits.

• Forecasts inform cash flow predictions and give the business a clear idea of what cash inflows will be, so that finances can be managed

• They allow the business to plan orders of supplies and components. For some businesses, suppliers will need notice of large orders. Sales forecasts help build relationships with suppliers

• They enable the business to ensure it has the correct staffing levels for the predicted sales. From Table 1, if the business had a forecast for 2016 of US$250,000, this might mean that it needs to recruit more staff to meet these higher sales level

• They enable the business to ensure that it has the capacity to meet the predicted orders. If forecasts are for higher sales, the business may need to buy additional equipment or rent/buy premises.

FACTORS AFFECTING SALES FORECASTING

Sales forecasting is extremely important for a business, but it can be an extremely difficult process to complete. Past data is useful in helping to predict future outcomes, but this is not entirely accurate. Unexpected things happen and there are other factors that need to be taken into account when trying to forecast future sales. Three crucial factors are consumer trends, economic variables and actions of competitors.

Consumer trends: Businesses aim to meet the needs of consumers by providing products and services. In a market economy successful businesses anticipate and meet the needs of consumers by supplying goods and services that are in demand at a point in time.

Today, the most popular use of a smartphone is not the 'phone' at all; it is to access the Internet, either through the phone's browser, or through apps.

- Seasonal variations. Some products are seasonal in that they are purchased in smaller or greater quantities at different times of the year. Some businesses that are affected by seasonal factors are obvious: coastal hotels and guest houses see a rise in sales during spring and summer months; power companies see a rise in sales of gas and electricity during the winter.
- Fashion. Consumer tastes and preferences change and can be highly unpredictable. Fashion-particularly in the area of clothing - changes constantly. This can make accurate sales forecasting very difficult.

Long-term trends. Whereas fashions can change in the short term, and with little notice, other changes to consumer behaviour are more long term.

Economic variables: What happens in the wider economy has some important implications for business sales forecasting. The economy is comprised of consumers (households), businesses and government. Economic variables are measurements of different aspects of an economy that give an indication of how that economy is performing. Economic performance has some important implications for businesses generally, and sales forecasting in particular. Important economic variables are as follows:

• Economic growth. **Economic growth** is measured using gross domestic product (GDP). This is a measure of the total output of an economy. When economic growth is rising, sales for many - but not all businesses tend to increase. One reason for this is that **consumer incomes** generally increases during periods of economic growth, and this translates into higher spending. In a period of strong economic growth, sales forecasts will often be increased.

• **Interest rates**. These are charged by banks and other financial institutions for borrowing money. When interest rates are high, the cost of loans increases and the demand for loans falls. Loans are used by consumers and businesses to fund purchases.

• **Inflation**. The general rise in consumer prices over time. When inflation is rising this indicates that prices in the economy are rising also. In such periods consumers and businesses often choose to spend less. Sales forecasts are reduced at these times.

• **Unemployment**. The number of people who are out of work. During a recession, unemployment rises. During the economic crisis that started in 2008, unemployment rose in a number of countries, particularly in Europe. As a result, spending in many economies fell and this had a huge impact on business sales and orders. At such times sales forecasts are amended.

• **Exchange rates**. These reflect the value of one currency in terms of another. An exchange of £1 US$1.45 means that £1 will buy US$1.45. If this exchange rate rises, say to £1 = US$1.60, it is cheaper for UK consumers to buy goods and services from the USA. As a result, UK businesses might find that sales fall due to the increased price competitiveness of the USA. The impact on sales forecasts would be to cause them to fall, as consumers are shifting their spending to US goods and services.

Actions of competitors: The actions of competitors can have a real impact on a business in many ways, from pricing to promotion. Sales forecasting is another area that can be affected by the actions of competitors. Where competitors use a strategy to capture market share from a rival, sales forecasts may need to be adjusted downwards.

Change in economic variable	Impact on business sales forecasts	
	Higher sales forecast	Lower sales forecast
Strong economic growth	X	
Slower GDP growth		X
Rising inflation		X
Falling inflation/deflation	X	
Rising unemployment		X
Falling unemployment	X	
Rising interest rates		X
Falling interest rates	X	
Higher exchange rate		X
Falling exchange rate	X	

▲ Table 4 Effect of economic variables

The size of the impact on sales forecasts will depend on the type of strategy used by the competing business. A short-term promotion might affect sales for a short period of time only, and not lead to a change to next year's sales forecast. A rival restaurant opening next door to an existing restaurant is likely to have a greater, more long-term effect.

The effect of the actions of competitors cannot truly be known until some point in the future. Consider the following example.

Competitor enters market 2016						
Year	2013	2014	2015	2016 ↓	2017	2018 (forecast)
Sales (£ 000)	78	86	84	79	62	65

▲ Table 5 Yearly sales of a coffee shop

SUBJECT VOCABULARY

consumer income the amount of income remaining after taxes and expenses have been deducted from wages.
consumer trends the habits or behaviours of consumers that determine the goods and services they buy.
economic growth the rise in output of an economy as measured by the growth in Gross Domestic Product (GDP), usually as a percentage.
economic variables measures within the economy which have effects on business and consumers. Examples include unemployment, inflation and exchange rates.
extrapolation forecasting future trends based on past data.
forecasting a business process, assessing the probable outcome using assumptions about the future.
sales forecast prediction of future sales revenue, often based on previous sales data.
time series data a method that allows a business to predict future levels from past figures.

THE DIFFICULTIES OF SALES FORECASTING

Predicting the future is not easy. This uncertainty applies in all areas of life. What will the weather be like next week? How will my football team perform next season? Will the value of my house rise or fall over the next 12 months? This affects many aspects of life, but especially business.

Volatile consumer tastes and preferences: We have seen how a business can use past sales data to identify future sales. This is called extrapolation. This is often a good starting point and a reasonable basis on which to base forecasts. However, extrapolation is not a perfect method to base future predictions.

Range of data: There is a lot of data available to consumers, business and government. Which data is most important for a business to use? In addition to its own sales data, what about wider economic data, such as unemployment, average income growth, commodity prices, exchange rates and so on? This extensive range of data can be difficult enough for a large multinational business to make sense of, let alone a small business. A real difficulty of accurate sales forecasting lies in the sheer amount of data that exists which might inform the forecast.

Subjective expert opinion: However statistical and quantitative time series data might be, the final decisions around sales forecasts are often left to business experts, such as sales analysts. Experts will base their judgements in part on their own opinion and knowledge of the market and wider economic variables. These opinions are necessarily subjective and can be wrong. Crocs almost collapsed because of the professionally compiled but ultimately inaccurate sales forecasts of its marketing team.

Chapter 31 – Break – Even

CONTRIBUTION

Craig Eckert sells second-hand cars. His last sale was £990 for a Golf GTI. He bought the Golf at a car auction for £890. The difference between what he paid for the car and the price he sold it for is £100 (£990 - £890). This difference is called the **contribution**. It is not profit because Craig has **fixed costs** to pay such as rent, insurance and administration expenses.

CONTRIBUTION PER UNIT AND TOTAL CONTRIBUTION

A business might calculate the contribution on the sale of a single unit, or the sale of a larger quantity, such as a whole year's output.

BREAK-EVEN POINT

Businesses, particularly those that are just starting up, often like to know how much they need to produce and sell to break-even. If a business has information about fixed costs and variable costs and knows what price it is going to charge, it can calculate how many units it needs to sell to cover all of its costs. The point where total costs (fixed costs + variable costs) are exactly the same as total revenue is called the **break-even point**.

CALCULATING BREAK-EVEN USING CONTRIBUTION

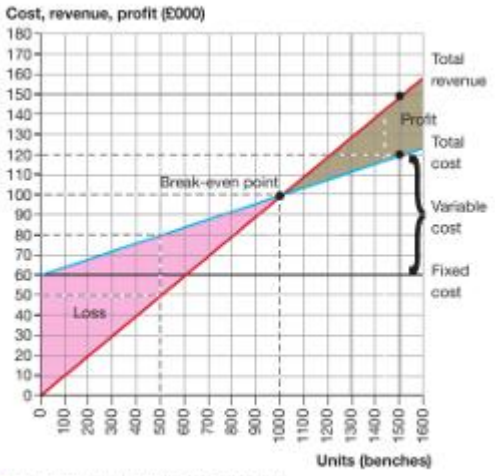
It is possible to calculate the break-even output if a firm knows the value of its fixed costs, variable costs and the price it will charge. The simplest way to calculate the break-even output is to use contribution. The following formula can be used.

$$\text{Break-even output} = \frac{\text{Fixed costs}}{\text{Contribution}}$$

BREAK-EVEN CHART

The use of graphs is often helpful in break-even analysis. It is possible to identify the break-even point and break-even output by plotting the total cost and total revenue equations on a graph. This graph is called a break-even chart. Figure 1 shows the break-even chart for Jack Cadwallader's business. Output is measured on the horizontal axis and revenue, costs and profit are measured on the vertical axis. What does the break-even chart show?

- The value of total cost over a range of output. For example, when Jack produces 1500 benches total costs are £120,000.
- The value of total revenue over a range of output. For example, when Jack produces 1500 benches total revenue is £150,000.
- Break-even charts can show the level of fixed costs over a range of output. For example, the fixed costs for Jack's business are £60,000.
- The level of output needed to break-even. The break-even point is where total costs equal total revenue of £100,000. This is when 1000 benches are produced. So the break-even output is 1000 benches.
- The profit at a particular level of output. If Jack produces 1500 benches, profit is shown by the vertical gap between the total cost and total revenue equations. It is £30,000.
- At levels of output below the break-even output, losses are made. This is because total costs exceed total revenue. At an output of 500, a £30,000 loss is made.
- At levels of output above the break-even output, a profit is made. This profit gets larger as output rises. At an output of 1500 a profit of £30,000 is made.
- The relationship between fixed costs and variable costs as output rises. At low levels of output, fixed costs represent a large proportion of total costs. As output rises, fixed costs become a smaller proportion of total costs.

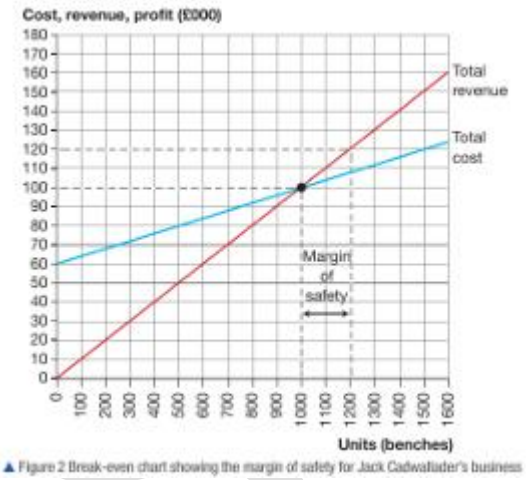


▲ Figure 1 Break-even chart for Jack Cadwallader

MARGIN OF SAFETY

What if a business is producing more than the break-even output? It might be useful to know by how much sales could fall before a loss is made. This is called the **margin of safety**. It refers to the range of output over which a profit can be made. The margin of safety can be identified on the break-even chart by measuring the distance between the break-even level of output and the current (profitable) level of output.

USING BREAK-EVEN ANALYSIS



▲ Figure 2 Break-even chart showing the margin of safety for Jack Cadwallader's business

Break-even analysis is used in business as a tool to make decisions about the future. It helps answer 'what if' questions. For instance, what would happen in each of these situations.

• If the price went up, what would happen to the break- even point?

• If the business introduced a new product line, how many would the new product have to sell to at least break-even?

• If the business is just starting up, what has to be the level of output to prevent a loss being incurred?

• What will happen to the break-even point if costs are forecast to rise?

• Would the break-even point be lower if components were bought in from outside suppliers rather than being made in-house?

Break-even analysis is also found in business plans. Banks often ask for business plans when deciding whether or not to give a loan. So break-even analysis can be vital in gaining finance, especially when starting up a business.

LIMITATIONS OF BREAK-EVEN ANALYSIS

Break-even analysis does have some limitations. It is often regarded as too simplistic and some of its assumptions are unrealistic.

Output and stocks: It assumes that all output is sold, so that output equals sales, and no stocks are held. Many businesses hold stocks of finished goods to cope with changes in demand. There are also times when firms cannot sell what they produce and choose to accumulate stocks of their output to avoid making staff redundant.

Unchanging conditions: The break-even chart is drawn for a given set of conditions. It cannot cope with a sudden increase in wages and prices or changes in technology.

Accuracy of data: The effectiveness of break-even analysis depends on the quality and accuracy of the data used to construct cost and revenue functions. If the data is poor and inaccurate, the conclusions drawn on the basis of the data may be incorrect. For example, if fixed costs are underestimated, the level of output required to break- even will be higher than suggested by the break-even chart.

Non-linear relationships: It is assumed that the total revenue and total cost lines are linear (a straight line). This may not always be the case. For example, a business may have to offer discounts on large orders, so total revenues fall at high outputs. In this case the total revenue line would rise and then fall, and be curved. A business can lower costs by buying in bulk. So costs may fall at high outputs and the costs function will be curved.

Multi-product businesses: Many businesses produce more than one single product. It is likely that each product will have different variable costs and different prices. The problem is how to allocate the fixed costs of the multi-product business to each individual product. There are a number of ways, but none is perfect. Therefore, if the fixed costs incurred by each product are inaccurate, break-even analysis is less useful.

Stepped fixed costs: Some fixed costs are stepped. For example, in order to increase output a manufacturer may need to acquire more capacity.

Chapter 32 – Cash flows

CASH FLOW FORECASTS

Without cash a business cannot trade. Experts suggest that about 20 per cent of business failures are due to poor cash flow. Even when trading conditions are good, businesses can fail. A business must ensure that it has enough cash to pay staff wages and bills when they are due. One way for a business to help control its cash flow is to plan ahead by producing accurate cash flow forecasts. Such forecasts also form an important part of business plans.

INTERPRETING CASH FLOW FORECASTS

A cash flow forecast lists all the likely receipts (cash inflows) and payments (cash outflows) over a future period of time. All the entries in the forecast are estimated because they have not occurred yet. The forecast shows the planned cash flow of the business month by month. It also shows three key figures at the bottom of the forecast:

Net cash flow: This is the difference between cash inflows and cash outflows for the month. The equation to calculate net cash flow is given by:

Net cash flow = Total cash inflows - Total cash outflows

If this value is negative, it means that more cash has flowed out of the business than has flowed in.

Opening balance: This is the amount of cash that the business has at the beginning of each month. For the first month in the forecast, it will be the amount of cash the business has left over from the previous trading period. For the rest of the forecast the opening balance will always be the same as the closing balance from the previous month.

Closing balance: This is the amount of cash that the business expects to have at the end of each month. It takes into account the opening balance and the net cash flow for the trading month. It may be positive or negative. The equation to calculate the closing balance is given by:

Closing balance = Net cash flow + Opening balance

CONSTRUCTING A CASH FLOW FORECAST

Constructing a cash flow forecast is a straightforward process. It can be done manually but is easier using a spreadsheet. As shown in Table 1 the forecast is divided into columns. The first column is used to describe the entries in the forecast and the remainder shows financial values for each month in a future trading period - 6 months or 12 months perhaps. The cash flow forecast is constructed by entering financial values in the three sections described below.

Cash inflows: Once the structure of the document has been prepared (dividing the paper into columns), the values for expected cash inflows for each month can be entered. This is the top section in the forecast. Examples of cash inflows are cash from cash sales, cash from credit sales, interest received from banks, fresh capital (introduced by the owners perhaps), cash from loans and cash from the sale of business assets such as an unwanted vehicle. Most of these values have to be estimated (forecast) by the business.

Once these values have been entered for each month in the forecast the total cash inflows can be calculated.

												(£000s)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cash inflows												
Cash sales	451	360	399	410	490	464	452	340	450	390	480	680
Capital introduced									300			
Total cash inflows	451	360	399	410	490	464	452	340	750	390	480	680
Cash outflows												
Goods for resale	150	180	150	180	150	180	150	180	150	180	220	250
Leasing charges	20	20	20	20	20	20	20	20	20	20	20	20
Motor expenses	40	40	40	40	40	40	40	40	40	40	40	40
Wages	100	100	100	100	100	100	100	105	105	105	125	125
VAT			126			189	187		187			198
Loan repayments	35	35	35	35	35	35	35	35	35	35	35	35
Telephone		11			12			12			14	
Other	20	20	20	20	20	20	20	20	20	20	20	20
Total cash outflows	365	406	491	395	377	584	552	412	557	400	474	688
Net cash flow	86	(46)	(92)	15	113	(120)	100	(72)	193	(10)	6	(8)
Opening balance	11	97	51	(41)	(26)	87	(33)	63	(9)	184	174	180
Closing balance	97	51	(41)	(26)	87	(33)	63	(9)	184	174	180	172

▲ Table 1 Cash flow forecast for Fishan's Ltd
Brackets show minus figures.

Cash outflows: The middle section of the cash flow forecast is constructed by entering all the expected payments that the business plans to make each month. These payments represent cash outflows. This is likely to be the largest section and examples of monthly entries might include payments to suppliers for raw materials or goods for resale; payments for utilities such as gas, water and electricity; wages; payments to the tax authorities; loan repayments to banks and other expenses such as advertising, insurance, cleaning, rent, interest and motor expenses.

Closing balance: The bottom section of the forecast is used to calculate the expected closing balance. This is the cash that the business expects to have at the end of each month. It is calculated by adding together the net cash flow and the opening balance and may be positive or negative. For example, in Table 1 the closing balance in January is forecast to be £97,000. Note that the closing balance in January is also the opening balance for the next month - February in this case.

CHANGES IN CASH FLOW VARIABLES

Once a cash flow forecast has been prepared, it can be adjusted to show the effect on net cash flows of changes in some of the variables.

Table 3 shows a 6-month cash flow forecast for Patel Motors, a small garage and car service business. Mr Patel opened a shop inside his garage in May and hopes that this will help to boost his cash flow.

The forecast shows that by the end of the 6-month period the cash position of the business is expected to improve. The closing cash balance is forecast to rise from £1900 in June to £3550 in November.

The effects of changes to variables are shown in Table 4. There will be a negative impact on the cash balance of the business at the end of the 6 months. The closing cash balance is now expected to fall from £1900 in June to £1550 in November.

	June	July	August	September	October	November
Cash inflows						
Petrol and repairs	6700	6600	7200	6800	7100	7600
Shop and other sales	2250	2750	2300	3300	3850	4350
Total cash inflows	**8950**	**9350**	**9500**	**10,100**	**10,950**	**11,950**
Cash outflows						
Casual labour	800	800	800	800	800	800
Petrol and parts	4250	4300	4700	4500	4500	5000
Stock and other expenses	2450	2500	4500	5000	5600	5600
Total cash outflows	**7500**	**7600**	**10,000**	**10,300**	**10,900**	**11,400**
Net cash flow	**1450**	**1750**	**(500)**	**(200)**	**50**	**550**
Opening balance	**450**	**1900**	**3650**	**3150**	**2950**	**3000**
Closing balance	**1900**	**3650**	**3150**	**2950**	**3000**	**3550**

▲ Table 3 Cash flow forecast for Patel Motors

	June	July	August	September	October	November
Cash inflows						
Petrol and repairs	6700	6600	7200	6800	7100	7600
Shop and other sales	2250	2750	2300	3300	3850	4350
Debt repayment				400		
Total cash inflows	**8950**	**9350**	**9500**	**10,500**	**10,950**	**11,950**
Cash outflows						
Casual labour	800	800	1100	1100	1100	1100
Petrol and parts	4250	4300	4700	4500	4500	5000
Stock and other expenses	2450	2500	4500	5000	5600	5600
Computer equipment			1200			
Total cash outflows	**7500**	**7600**	**11,500**	**10,600**	**11,200**	**11,700**
Net cash flow	**1450**	**1750**	**(2000)**	**(100)**	**(250)**	**250**
Opening balance	**450**	**1900**	**3650**	**1650**	**1550**	**1300**
Closing balance	**1900**	**3650**	**1650**	**1550**	**1300**	**1550**

▲ Table 4 Amended cash flow forecast for Patel Motors

THE USE OF CASH FLOW FORECASTS

Businesses draw up cash flow forecast statements to help control and monitor cash flow in the business. There are certain advantages in using forecasts to control cash flow.

Identifying the timing of cash shortages and surpluses: A forecast can help to identify in advance when a business might wish to borrow cash. At the bottom of the statement the monthly closing balances are shown clearly. This will help the reader to identify when a bank overdraft will be needed. For example, Table 1 showed that Fishan's would need to borrow money in March, April, June and August. In addition, if a large cash surplus is identified in a particular month, this might provide an opportunity;

Supporting applications for finance: When trying to raise finance, lenders often insist that businesses support their applications with documents showing business performance, outlook and solvency. A cash flow forecast will help to indicate the future outlook for the business. It is also common practice to produce a cash flow forecast statement in the planning stages of setting up a business. It is unlikely that any potential investor or lender will finance a business without a thorough business plan supported by a cash flow forecast.

Enhancing the planning process: Careful planning in business is crucial. It helps to clarify aims and improve performance. Producing a cash flow forecast is a key part of the planning process because it is a document concerned with the future.

Monitoring cash flow: During and at the end of the financial year, a business should make comparisons between the predicted figures in the cash flow forecast and those that actually occurred. This will help identify where problems have arisen. The business can then try to identify possible reasons for any significant differences between the two sets of figures. For example, it might be that an overpayment was made. Constant monitoring in this way should allow a business to control its cash flow effectively.

THE LIMITATIONS OF CASH FLOW FORECASTS

Although cash flow forecasts are extremely useful in helping to manage a business, it is important to recognise their limitations.

• Some of the financial information used in forecasts will be based on estimates. For example, even under normal trading conditions it is very difficult to predict sales revenue for a future time period - it has to be estimated. It is also difficult to estimate future costs - particularly variable costs. These will be dependent on future sales that are uncertain. Fixed costs, such as rent, rates and insurance are more predictable.

• Business activity is subject to external forces that are beyond the control of owners and managers. Changes in factors such as interest rates, the state of the economy, government legislation, exchange rates, competition and consumer tastes can have an impact on business costs and revenues.

• A business uses resources in preparing a cash flow forecast. A business owner or employee will spend time gathering the information and assembling the forecast. It will also have to be regularly updated so that the monitoring process is meaningful.

• A cash flow forecast only focuses on one important business variable - cash. Other variables are also important, such as profit, profit margins and productivity. The cash flow forecast cannot be used on its own to evaluate the performance of a business.

SUBJECT VOCABULARY

cash flow forecast the prediction of all expected receipts and expenses of a business over a future time period which shows the expected cash balance at the end of each month.
cash inflows the flow of money into a business.
cash outflows the flow of money out of a business.
net cash flow the difference between the cash flowing in and the cash flowing out of a business in a given time period.
solvency the degree to which a business is able to meet its debts when they fall due.

Chapter 33 – Budgets

PURPOSE OF BUDGETS

A budget is a financial plan that is agreed in advance. It must be a plan and not a forecast - a forecast is a prediction of what might happen in the future, whereas a budget is a planned outcome that the firm hopes to achieve. A budget will show the money needed for spending and how this might be financed. Budgets are based on the objectives of businesses.

Budgets are likely to be used by both large and small businesses. Small business owners often underestimatethe importance of financial control when running their businesses and budgeting is a method of control that could easily be employed. This might help avoid problems in the future.

Budgets fulfil the following specific purposes.

Control and monitoring: Budgeting allows management to control the business. It does this by setting objectives and targets. These are then translated into budgets for a particular period; say, the coming year. How successful the business has been in achieving those targets can be found by comparing the actual results with the budget.

Planning: Budgeting forces management to think ahead. Without budgeting, managers might work on a day-by-day basis, only dealing with opportunities and problems as they arise. Budgeting, however, plans for the future. It anticipates problems and their solutions.

Co-ordination: Larger businesses are often complex organisations. There may be many departments and different operating sites - for instance for production and administration. A multinational company will have sites and workers spread across the world. Budgeting is one way in which managers can co-ordinate and control activities of the many areas of business.

Communication: Planning allows the objectives of the business to be communicated to the workforce. By keeping to a budget, managers and workers have a clear framework within which to operate. So budgeting removes an element of uncertainty within decision- making throughout the business. Budgeting also shows the priorities of the business and highlights costs that need to be kept under control.

Efficiency: In a business with many workers, it becomes important for management to empower staff by delegating decision making. In a medium to large business, senior management cannot efficiently make every decision on behalf of every employee, department or site. Budgeting gives financial control to lower levels of management who are best able to make decisions at their point within the organisation.

Motivation: Budgeting should act as a motivator to the workforce. It provides workers with targets and standards. Improving on the budget position is an indication of success for a department or group of workers. Fear of failing to reach budgeted targets can be an incentive to the workforce.

TYPES OF BUDGET

Businesses might use a wide range of different budget types. However, some budgets are more frequently used than others. Two key types are the sales budget and the production cost budget. Budgets are often prepared using historical figures. This means that the data used to prepare the budgets is based on data that the business has gathered in the past. Obviously adjustments will be made to take into account future known events, such as planned changes in production or changes in costs or prices. Examples of budgets that make use of historical figures are shown in Table 2.

Budget	Description
Sales volume	A key budget – shows planned sales levels
Sales revenue	Uses sales volume budget and prices to show planned revenue
Production cost	Based on sales volume budget and shows all planned production costs
Overheads	Shows all planned indirect costs, such as insurance, rent and office wages
Total cost	Shows all planned business costs
Marketing	Shows planned spending on, for example, research, advertising, promotion and sales
R&D	Shows planned expenditure in research and development
Profit	Shows planned revenue, costs and profit
Cash	Shows planned cash inflows and outflows and cash balances
Master	Shows a summary of all budgets – including cost, revenue and profit

▲ Table 2 Types of budgets – some examples

Zero-based budget: The financial information used in most budgets is based on historical data.

However, in some areas of business it is not so easy to measure costs. Examples might be certain marketing. administration or computer services costs. Where costs cannot be justified then no money is allocated in the budget for those costs. This is known as **zero-based budgeting (ZBB) or zero** budgeting.

When choices are made, businesses try to minimise the opportunity cost. ZBB also involves a cautious approach to spending, so that costs are minimised. Both approaches include an element of 'value for money'. The main advantages of ZBB are that:

				(£)
	Feb	Mar	Apr	May
AD23	1200	1200	1200	1200
	(12 × 100)	(12 × 100)	(12 × 100)	(12 × 100)
AD24	1000	1600	1600	2000
	(20 × 50)	(20 × 80)	(20 × 80)	(20 × 100)
AE12	1000	1250	1000	1250
	(25 × 40)	(25 × 50)	(25 × 40)	(25 × 50)
AE13	900	900	1500	1500
	(30 × 30)	(30 × 30)	(30 × 50)	(30 × 50)
Total	4100	4950	5300	5950

▲ Table 4 Sales revenue budget for Emerald Artwork

Production budget

Emerald Artwork's production costs include materials, direct labour, indirect labour and overheads. Table 5 shows the production cost budget for Emerald Artwork. The budget shows that total production costs are planned to rise over the time period.

				(£)
	Feb	Mar	Apr	May
Cost of materials	660	780	810	900
(£3 per unit)	(3 × 220)	(3 × 260)	(3 × 270)	(3 × 300)
Direct labour costs	880	1040	1080	1200
(£4 per unit)	(4 × 220)	(4 × 260)	(4 × 270)	(4 × 300)
Indirect labour costs	440	520	540	600
(£2 per unit)	(2 × 220)	(2 × 260)	(2 × 270)	(2 × 300)
Production overheads				
(10% of direct & indirect costs)	1320 × 10% = 132	1560 × 10% = 156	1620 × 10% = 162	1800 × 10% = 180
Total	2112	2496	2592	2880

▲ Table 5 Production cost budget for Emerald Artwork

- the allocation of resources should be improved
- a questioning attitude is developed which will help to reduce unnecessary costs and eliminate inefficient practices
- staff motivation might improve because evaluation skills are practised and a greater knowledge of the firm's operations might develop
- it encourages managers to look for alternatives. ZBB also has some disadvantages.
- It is time-consuming because the budgeting process involves the collection and analysis of quite detailed information so that spending decisions can be made.
- Skilful decision making is required. Such skills may not be available in the organisation. In addition, decisions may be influenced by subjective opinions.
- It threatens the existing way in which the business is run. This might adversely affect motivation.
- Managers may not be prepared to justify spending on certain costs. Money, therefore, may not be allocated to spending which could benefit the business.

To deal with these possible problems, a business might give each department a 'base' budget of, say, 50 per cent. Departments could then be invited to bid for increased expenditure on a ZBB basis.

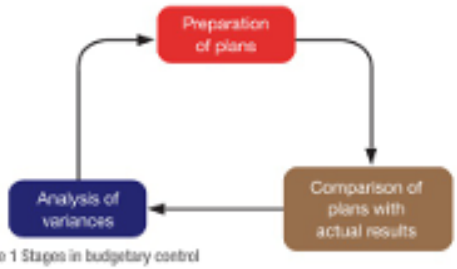
USING BUDGETS

Budgetary control or budgeting involves a business using budgets to look into the future, stating what it wants to happen, and then deciding how to achieve these aims. The control process is shown in Figure 1 and explained below.

Preparation of plans: All businesses have objectives. If the sales department increases sales by 10 per cent, how does it know whether or not this is satisfactory? Targets are usually set which allow a business to determine whether its objectives have been met. The results it achieves can then be compared with the targets it sets.

Comparisons of plans with actual results: Control will be effective if information is available as quickly as possible. Managers need budgetary data as soon as it is available. Recent developments in information technology have helped to speed up the supply of data.

Analysis of variances: This is the most important stage in the control process. Variance analysis involves trying to find reasons for the differences between actual and expected financial outcomes. Variances are explained in the next section. A variance might be the result of some external factor influencing the business. In this case the business may need to change its business plans and adjust the next budget.



▲ Figure 1 Stages in budgetary control

VARIANCES

A variance in budgeting is the difference between the figure that the business has budgeted for and the actual figure. Variances are usually calculated at the end of the budget period, as that is when the actual figure will be known.

Variances can be favourable (F) or adverse (A). Favourable variances occur when the actual figures are 'better' than the budgeted figures.

• If the sales revenue for a month was budgeted at £25,000, but turned out to be £29,000, there would be a £4000 favourable variance (£29,000 £25,000) as sales revenue was higher than planned.

• If costs were planned to be £20,000 and turned out to be £18,000, this would also be a favourable variance of £2000, as actual costs were lower than planned. Adverse variances are when the actual figures are worse than the budgeted figures. Actual sales revenues may be lower than planned, or actual costs may be higher than planned. Managers will examine variances and try to identify reasons why they have occurred.

TYPES OF VARIANCE

Variances can be calculated for a wide range of financial outcomes. Most budgets are set for expenditure (costs) and income (sales revenue). Consequently, variances will also focus on a firm's expenditure and income. This suggests that variance analysis provides a very good way of monitoring business costs. Examples of variances could be wages, materials, overheads and sales revenue. Variances can also be calculated for volumes. For example, it is possible to calculate a sales variance or a labour hours variance. One of the most important variances of all is the profit variance.

USING VARIANCES FOR DECISION MAKING

The final stage in budgetary control is the analysis of variances. It is important to identify the reasons why variances have occurred. If variances are adverse it will be necessary to take action to ensure that adverse more use of the same or similar campaigns in the future. Variance analysis can help business decision makers because of the information it provides about financial outcomes and their causes.

DIFFICULTIES OF BUDGETING

Businesses may encounter problems when setting budgets and using them as tools for financial management.

Setting budgets:

• Problems may arise because figures in budgets are not actual figures. The figures are plans based on historical data, forecasts or human judgement. A business might construct its budgets by adding a percentage to historical data without systematic analysis.

•The most important data in the preparation of nearly all budgets is sales data. If sales data are inaccurate, many of the firm's budgets will be inexact.

• The setting of budgets may lead to conflict between departments or staff. A business may only have limited funds and departments compete against each other for those funds. For instance, the marketing department may want to promote a product, but new machinery may be needed in the R&D department.

• The time spent setting budgets could have been spent on other tasks. For example, sales managers could be winning new customers and increasing revenue for the business instead of drawing up this year's budget.

• Sometimes businesses set over-ambitious objectives. When this happens, the budgeting process is pointless because budgets are being drawn up for targets that are unachievable. The budget then ceases to be a useful document against which outcomes can be compared.

Motivation: In some businesses, workers are left out of the planning process. If workers are not consulted about the budget, it could be difficult to use that budget to motivate them. Budgets that are unrealistic can also fail to motivate staff.

• Manipulation: Budgets can be manipulated by managers.

• Rigidity: Budgets can sometimes restrict business activities. The budget may be set so that older vehicles have to be kept rather than replaced. But this may lead to customer dissatisfaction and lost orders because deliveries are unreliable.

Short-termism: Some managers might be too focused on the current budget. They might take actions that damage the future performance of the business just to meet current budget targets. For example, to keep labour costs down in the current budget period, the manager of a supermarket might reduce staffing on customer service. This may well save costs now, but it could lead to customers leaving due to poor service. Consequently the long-term performance of the business would suffer.

Revision questions