

CAT T10 Managing Finance notes by Seah

Chapter 1 Cash and cash flows	2
Chapter 2 Forecasting cash flows	3-5
Chapter 3 Cash forecasting techniques	6
Chapter 4 Cash and treasury management	7
Chapter 5 Investing surplus funds	8-9
Chapter 6 Working capital management	10-11
Chapter 7 Managing payables and inventory	12-13
Chapter 8 Managing receivables	14-16
Chapter 9 Assessing creditworthiness	17-18
Chapter 10 Monitoring and collecting debts	19-20
Chapter 11 The banking system and financial markets	21-22
Chapter 12 Economic influences	23-24
Chapter 13 Short and medium-term finance	25-27
Chapter 14 Long-term finance	28-32
Chapter 15 Financing of small and medium-sized enterprises	33-34
Chapter 16 Decision making	35-37
Chapter 17 CVP analysis	38-39
Chapter 18 Capital expenditure budgeting	40-41
Chapter 19 Methods of project appraisal	42-45

Key areas of syllabus are source of finance (chapter 11-15), cash budgets (chapter 2), working capital management (chapter 6-7), credit management (chapter 8-10), capital investment appraisal (chapter 19) and short-term decision making (chapter 16-17). Small areas must still be considered to maximize chances of success (not only pass).

Chapter 1 Cash and cash flows

A business which fails to make profits will go under in the long-term. However, a business which runs out of cash, even for a small period, will fail although it is profitable.

Account showing trading profits are not the same as statement of cash flows as account is prepared under accrual accounting (earning basis).

Cash budgets will be prepared under cash accounting (receipt and payment basis), only items that involve cash flows will be included.

Cash transactions can be capital or revenue, exceptional (unusual) or unexceptional and regular or irregular.

Cash flow can be defined in many ways:

- Net cash flow – total change in cash balances
- Operational cash flow – net cash flow from trading activities
- Priority cash flows – not relate to trade but important for continuing operation, eg. interest payments and tax payments.
- Discretionary cash flows – cash flows that do not have to be made.
- Financial cash flows – cash flows from long-term capital.

You should have knows the meaning of accrual concept, but when planning for the use of cash, we will use cash accounting. **Advantages of cash flow accounting** are:

- (i) Potential lenders are more interested in company's ability to repay them (liquidity) than its profitability.
- (ii) Satisfies the needs of other financial report users better.
- (iii) Cash flow forecasts are easier to prepare, as well as more useful than profit forecasts.

For cash accounting, you have to watch out for timing differences between sales being made and cash being received, and purchases/expenditure and cash payments.

Chapter 2 Forecasting cash flows – Important!

The **main purpose of preparing budgets** is to measure whether there are likely to be cash shortages or large surpluses. Cash flow forecasts provide an early warning of liquidity problems and funding needs.

Liquidity = company's ability to repay debts/cash position.

A **cash budget** is a detailed forecast of expected cash receipts, payments and balances over a budget period. If you see budget profiling in exam, it means process of preparing a budget.

In exam, you may be asked to prepare a cash budget for six months and this will take some time, you must remember to read the information carefully and ignore non-cash items such as depreciation and profit on disposal (but include cash received from disposal). The timing is important, for example a new delivery vehicle was brought in June and the cost of \$8000 is to be paid in August, then you should record \$8000 in August. Sometime question may give you mark-up or margin and you are required to use it to find out the amount of purchases (take note that you don't record the full amount in the month, you only record the amount actually paid).

A good step to prepare cash budget is to set out the pro-forma first and include amount which does not or just require easy calculation, then only do workings and include the rest of the amount. Example of cash budget format is as follow:

	Jul	Aug	Sep	Oct	Nov	Dec
<u>Receipts</u>	\$	\$	\$	\$	\$	\$
Credit sales	<u>100</u>					
	<u>100</u>					
<u>Payments</u>						
Corporation tax	50					
Materials	<u>10</u>					
	<u>60</u>					
Surplus/ (Deficit)	40					
Balance b/f	<u>10</u>	50				
Balance c/f	<u>50</u>					

➤ Now try to do June 2008 question 1 (a).

Cash budget is part of master budget and can be used for control purposes by producing rolling forecast (continually updated forecast) using spreadsheet to help.

Cleared funds forecasts are used for short-term planning. They take clearance delays into account. Cleared funds = actual cash available in bank for immediate spending. Uncleared funds = float = cash recorded in account but not yet available to use because of delays.

Ways to prepare are same as cash budget (start by preparing pro-forma), but the differences are you should be aware of the cleared and uncleared funds, for example BACS payment will usually cleared the cash instantly but cheque will take about three days. Example of cleared funds forecast format are as follow:

<u>Cleared funds forecast</u>					
	Mon	Tue	Wed	Thurs	Fri
<u>Receipts</u>	\$	\$	\$	\$	\$
Credit sales	<u>1000</u>	<u>4000</u>			
	<u>1000</u>	<u>4000</u>			
 <u>Payments</u>					
Suppliers	-	<u>3000</u>			
	-	<u>3000</u>			
Cleared excess receipts over payments	1000	1000			
Cleared balance b/f	<u>1000</u>	<u>2000</u>			
Cleared balance c/f	<u>2000</u>	<u>3000</u>			
 Uncleared funds float					
Receipts	4000	-			
Payments	<u>(3000)</u>	-			
	<u>1000</u>	-			
Total book balance c/f	3000	3000			

Uncleared funds float represent receipts and payments that are recorded in account but not yet cleared in bank, when it is cleared, it will be cancelled and recorded in cleared funds, in this example are \$4000 and \$3000.

➤ Now try December 2008 question 3.

You may also be given a forecast income statement, historical statement of financial position (SOFP) and forecasted SOFP, you are required to prepare a **forecasted cash flow statement**. You do not need to follow IAS 7 format, but methods are similar to statement of cash flow that you had done in financial accounting.

You have to compare both SOFP to know the cash flows. An increase in current assets such as inventories and receivables will cause cash outflow. This is because the company has brought more inventories or has effectively lent its customers some cash. Increases in current liabilities such as payables will cause cash inflow because effectively suppliers have lent the company money to buy supplies. Examples of forecast cash flow statement with guideline on the items are as follow:

Forecast cash flow statement for the year ended 31 December 2010

\$000

Operating profit (from income statement)

+ Depreciation (non-cash item)

- Tax paid (open account and put in balance b/d and c/d and also amount shown in income statement, the balance will be the tax paid)

- Finance cost (from income statement)

- Dividend paid (open account and do the same like tax paid, get information from additional information)

- Purchase of non-current asset (balance c/d + depreciation + disposal – balance b/d, get information from income statement and SOFP)

- Increase in inventories (balance c/d – balance b/d, get information from SOFP)

- Increase in receivables (balance c/d – balance b/d)

+ Increase in payables (balance c/d – balance b/d)

Projected increase/ decrease in cash

➤ Now try June 2006 question 2 (a).

You may also be required to prepare **forecast income statement**.

➤ Now try June 2007 question 3 (a).

If the forecast shows that there will be cash deficits, corrective actions must be taken (this is called feed-forward control). Examples of corrective actions are raising share capital, leading and lagging (obtain money from receivables faster and delay payment to suppliers).

Chapter 3 Cash forecasting techniques

Inflation (chapter 12) and other variables create uncertainty and their possible effects must be reflected in cash budgets. Inflation can be measured using **retail price index (RPI)** by taking current value divided by last year/past year's value and multiply by 100. **Index number** can be used to adjust budgeted figures. For example, given that forecasted price index for 2010 is 120 and this year are 100, budgeted cost for this year is \$100000, to adjust this year cost to next year price, you have to do as follow:

$120 / 100 \times \$100000 = \120000 , this will be the forecast cost for year 2010, price index of 120 means that the price will increase by 20%.

Sensitivity analysis tests the results of a forecast to see how sensitive they are to changes in inputs (eg. interest rates). For example it would be possible to test the income statement budget and cash budget for a shortfall in sales volume of 10% and see what happen to the profit and cash flow. Spreadsheet modeling is used for this purpose as it can manipulate the data very fast, by changing the sales value, the amount related (eg. Gross profit, cash balance) will also change accordingly.

- Now try June 2008 question 1 (b).

Chapter 4 Cash and treasury management

Cash management is concerned with **profitability, liquidity and safety**.

Profitability – refers to a surplus of income over expenditure.

Liquidity – ability of a company to pay its suppliers on time.

Safety – security of cash.

In optimizing cash balances, the financial manager must try to balance liquidity with profitability. Make sure that the float should be reduced,

there are **three reasons why there might be a lengthy float**:

Transmission delay – when payment is posted, it will take time for the payment to reach the payee.

Lodgement delay – delay in banking payments received.

Clearance delay – time needed for bank to clear a cheque.

Baumol cash management model is based on the idea that deciding on optimum cash balances is similar to deciding on optimum inventory levels. It is based on the formula $Q = \sqrt{2FS/I}$, Q is optimum cash balance, F is fixed annual cash outflow, S is cost per sale of securities, I is interest rate. You will not be required to do the calculation but may need to explain how it works.

The **limitations of Baumol cash management model** are as follow:

- (i) In reality, amounts required over future periods will be difficult to predict with much certainty.
- (ii) There may be costs associated with running out of cash
- (iii) The model works satisfactorily for a firm which uses cash at steady rate but not if there are larger inflows and outflows of cash over time.
- (iv) There may be difficulty in predicting future interest rates.

Treasury management in a modern enterprise covers various areas, and in larger business may be a centralized function. The **role of treasurer includes** liquidity management, funding management, currency management, formulating corporate financial objectives, handling corporate finance and risk management.

Advantages of centralized treasury department are: better short-term investment opportunities, improved foreign exchange risk management, able to employ experts and easier to manage cash.

- Now try June 2007 question 3 (b), (c).

Chapter 5 Investing surplus funds

Companies may face situations where they have cash surpluses. That surplus needs to be used in the best way, and this will often mean investing it. Surplus funds mean extra cash after all the expenditure.

Keynes had identified **three reasons why company should hold the surplus cash** rather than investing it:

- (i) Transaction motive – hold cash to meet regular commitments.
- (ii) Precautionary motive – hold cash in case of emergency purpose.
- (iii) Speculative motive – hold cash to wait for good opportunity to invest.

Before investing surplus funds, **key factors to consider** are as follow:

(i) Risk – the higher the risk, the higher the return. There are two types of risks, systematic risk (risk that affects the whole market and cannot be diversified away) and unsystematic risk (risks that affects only specific market, can be reduce by diversification, means to hold more than one/portfolio of investment).

(ii) Liquidity – the ease of converting into cash, high liquid low return.

(iii) Maturity – the duration of investment, long maturity high return.

(iv) Return – after considered risk, liquidity and maturity, company is in position of considering how much return they want.

The **interest yield** from investment is the coupon rate expressed as percentage of market price. For example, the market price of 9% treasury stock is \$134.1734, the interest yield can be calculated as $\text{coupon rate} / \text{market price} \times 100\% = (9\% \times \$100) / \$134.1734 \times 100\% = 6.71\%$, \$100 is known as PAR value/face value, you should assume that it is always \$100 in exam unless given.

There are many types of **investment options** for company:

Gilts – securities issued by the UK government.

Certificate of deposit (CD) is a certificate indicating that a sum of money has been deposited with a bank and will be repaid at a later date. As CDs can be bought and sold, they are liquid type of investment.

Bill of exchange – an unconditional order in writing from one person or company to another, requiring the recipient to pay a specified sum of money on demand (sight bill) or at a future date (term bill).

Commercial paper – short-term IOUs issued by companies which can be held until maturity or sold to others.

Loan stock – long-term debt capital raised by company for which interest is paid, usually half yearly and at a fixed rate.

Permanent interest bearing securities (PIBS) – a type of security specially created to enable building societies to raise funds while improving their capital ratios.

Bond – a term given to any fixed interest security, whether it is issued by government, a company, a bank or other institution. They are usually for long term and may or may not be secured.

Shares – there are two types of shares, ordinary and preference shares which will be discussed in chapter 14, but you can use June 2004 question 1's answer to learn it in detail.

- Now try June 2009 question 2 and June 2004 question 1 (learn from this question for investing surplus funds).

Chapter 6 Working capital management

Working capital is the capital available for conducting the day-to-day operations of an organization. The net working capital of a business can be defined as current assets less current liabilities.

Working capital management is important to ensure that sufficient liquid resources are maintained. This involves achieving a balance between the requirement to minimize the risk of insolvency and the requirement to maximize the return on assets.

Working capital cycle/cash operating cycle is the period between the suppliers being paid and the cash being received from the customers.

Working capital cycle in a manufacturing business equals:

The average time that raw materials remain in stock (inventory days)

- period of credit taken from suppliers (payables days)

+ time taken to produce the goods (inventory days)

+ time finished goods remain in stock after production is completed (inventory days)

+ time taken by customers to pay for the goods (receivables days)

In brief, **working capital cycle = inventory days + receivables days – payable days.**

Liquidity ratios may help to indicate whether a company is over-capitalised, with excessive working capital, or if a business is likely to fail. A business which is trying to do too much too quickly with too little long-term capital is overtrading.

Current ratio = current assets/current liabilities, ideal is 2:1.

Quick or acid test ratio = (current assets – inventories)/current liabilities, ideally should be at least 1:1.

Receivables days = receivables/credit sales x 365 days, this shows the length of time it takes for company's customers to pay. This formula can be changed to receivables days/365 days x credit sales to get receivables.

Payables days = payables/credit purchases x 365 days, this shows the time taken for company to pay suppliers. This formula can be changed to payables days/365 days x credit purchases to get payables.

Inventory turnover period (finish goods) = inventory/cost of sales x 365 days

Raw materials days = raw materials inventory/purchases x 365 days

Work-in-progress (WIP) period = (WIP inventory/cost of sales x % of completion) x 365 days

Inventory turnover = average inventory/cost of sales

You may need to use the ratios to calculate the operating cycle, raw material days + WIP days + finish goods days + receivables days – payables days = working capital cycle.

➤ Now try December 2008 question 2.

You may also be required to calculate working capital requirements, you need to calculate the current assets and current liabilities by changing the formula as I showed in receivables and payables days, you will be given the days, you need to calculate the values this time.

➤ Now try December 2007 question 2 (a).

If there are excessive inventories, receivables and cash, and very few payables, there will be an over-investment by the company in current assets. Working capital will be excessive and the company will be **over-capitalised**.

Overtrading is excessive trading by a business with insufficient long-term capital at its disposal, raising the risk of liquidity problems. **Symptoms of overtrading** are increased revenue, increased current/non-current assets, current liabilities more than current assets, assets financed by credit and not share capital, reduced current and quick ratios, inventory and receivables are more than sales.

Chapter 7 Managing payables and inventory

Effective management of payables involves seeking satisfactory credit terms from suppliers, getting credit extended during periods of cash shortage, and maintaining good relations with suppliers.

Trade credit is a useful and cheap source of finance, but a successful business needs to ensure that it is seen as a good credit risk by its suppliers. Some suppliers must be paid on specific dates. This must be remembered and cash must be available. The cost of lost cash discounts is calculated as $(100/100 - d)^{(365/t)} - 1$, d = % of discount, t = time difference between cash discount date and the credit term.

A business will use a variety of **methods to make payments**. Ignoring payroll (wages and salaries) and petty cash, the most common and convenient methods of payment are by cheque and by BACS. Other payment methods are often arranged based on the types that suppliers want, and this explains much of the use of banker's drafts, standing order and telegraphic transfers. Direct debits are not often used for payments by businesses, but might occasionally be used for convenience. Standing order – fixed amount and regular payment.

Telegraphic transfers – instructions for the payment are sent from the payer's bank to the payee's bank by telecommunications system.
Bankers' Automated Clearing Services (BACS) – a type of direct debit.

Economic order quantity (EOQ) is the optimal ordering quantity for an item of inventory that will minimize costs, at the same time balancing the need to meet customer demand. **Inventory costs** include:

- (i) Holding costs – eg. rental of warehouse, theft of stock.
- (ii) Ordering costs – eg. telephone charges, delivery costs.
- (iii) Shortage costs – eg. loss of sale
- (iv) Purchase costs – price of the goods

$EOQ/Q = \sqrt{2cd/h}$, c = cost of per order for one year, d = annual demand, h = holding cost per unit of inventory for one year, Q = reorder quantity

Total annual cost = holding cost + ordering cost + purchase cost

Holding cost = $Qh/2$, ordering cost = cd/Q

In exam, EOQ formula is likely to be given.

Assumptions of EOQ formula are purchase costs are constant, lead time is constant, demand is constant and no inflation.

➤ Now try June 2004 question 3 and June 2007 question 2.

Reorder level = maximum usage x maximum lead time , measure the inventory level at which replenishment order should be placed.

Maximum level = reorder level + reorder quantity – (minimum usage x minimum lead time), inventory level should not exceed this level.

Minimum level/buffer inventory = reorder level – (average usage x average lead time), inventory level should not fall under this level.

Average inventory = (reorder level/2) + minimum level

In exam, it may be given that there are **bulk discounts** from other supplier and you have to decide is it worth to change supplier, even though the price is reduced, annual holding costs will increase if more goods are ordered. To decide, compare the total annual cost if used EOQ and the total annual cost if takes the bulk discounts (company may order more to get the discount), the lower costs will be chosen. Besides financial factor, company also has to consider the non-financial factors such as the reliability of new supplier, the relationship with current supplier, and standard of goods and services offered by new supplier.

Just-in-time (JIT) aims to hold as little inventory as possible and production systems need to be very efficient to achieve this. Deliveries will be small and frequent rather than in bulk. Company needs to have a reliable supplier as that supplier will guarantee to deliver raw materials components of appropriate quality always on time. Unit purchasing prices may be higher as supplier guarantees the quality and also on time delivery. Workforce must also be flexible and multi-skilled in order to minimize delay and eliminate poor quality production. Reduced inventory levels mean that a lower level of investment in working capital will be required. JIT is also often associated with total quality management (TQM) as the two principles of TQM are get things right first time and continuous improvement.

➤ Now try December 2009 question 1.

Chapter 8 Managing receivables

Businesses have to take certain decisions regarding whether to offer credit to customers. This will be guided in credit policy. If they do, the extent, amount and period of credit that will be offered need to be decided.

Credit control deals with a firm's management of its working capital. Trade credit is offered to business customers. Consumer credit is offered to household customers. Credit is offered to enhance sales and profit.

Credit control policies are guideline on giving credit, can be set based on before offering credit (assess creditworthiness, check past record of customers), during credit period (monitor the receivables) and after credit period (chase slow payers, aged receivables analysis). The amount of total credit that a business offers depend on:

- (i) The firm's working capital needs and the investment in receivables.
- (ii) Management responsibility for carrying out the credit control policy.

An important aspect of the credit control policy is to devise suitable payment terms, covering when and how should payment be made.

Some firms offer **early settlement discount** if payment is received early.

Decision whether to offer settlement discount depend on the cost of capital (required rate of return) of company. If the cost of settlement discount is lower than cost of capital, then it is worth to offer. Cost of settlement discount = $(100/100 - d)^{(365/t)} - 1$, d = % of discount, t = time difference between cash discount date and the credit term.

Benefits of settlement discounts are:

- (i) Customers are more likely to pay early
- (ii) Cash is received quickly, improving cash flow of company
- (iii) Customers may make larger orders
- (iv) Fewer bad debts as more customers pay early

You may also be required to **determine the maximum discount** that the company should offer, it is basically the same way of calculating

effective interest rates which is $d = [(1 + r)^{(t/365)} - 1] \times 100\%$, d is discount, r is the rate of interest, t is time difference between cash discount date and the credit term. This is based on the idea that

maximum discount = effective interest rates that company is paying for its overdraft.

Credit control department is responsible for those stages in the collection cycle dealing with offer of credit and collection of debts. **Roles of the credit control department** include:

- Keeping receivables ledger up-to-date
- Pursuing overdue debts
- Dealing with customer queries
- Reporting to sales staff about new queries
- Giving references to third parties (eg. credit reference agencies)
- Checking out customers' creditworthiness
- Advising on payment terms

Features of credit control department that would encourage customers to pay on time are:

(i) Awareness of supplier's terms – the customer must be fully aware of the supplier's term. Payment terms should be clearly stated in writing when the order is confirmed.

(ii) Accurate and prompt invoicing – invoices should be correctly drawn up and sent up promptly to maximize time for payment.

(iii) Awareness of customer's systems – understand the payment system at customer's business. Without this knowledge, debts cannot always be collected promptly.

(iv) System of statements and reminders – send monthly statement to customers and issue reminders to late payers. If debts still remain unpaid, a final reminder should be issued.

➤ Now try December 2006 question 3.

A **contract** is an agreement which legally binds the parties (those entering into the agreement). The **key elements of contract** are **FOLAC**:

(i) Form – most contracts do not need to be in strict form unless sale or purchase of land under UK law and consumer credit agreements must also be in writing.

(ii) Offer – a firm proposal to give or do something.

(iii) Legal intention – both parties must have intention to create legal relationship.

(iv) Acceptance – unconditional agreement to all the terms of the offer.

(v) Consideration – consideration is what a promisee must give in exchange of what has been promised to him. Normally, this would be the price.

Specific terms and conditions that may be included in contracts in order to minimize losses and manager customers more effectively are:

(i) Length of free credit – each invoice should clearly state the credit period.

(ii) Interest charged on late payments – interest charged should be printed on each invoice as reminder.

(iii) Retention of title clause – such clause would state that the buyer does not obtain ownership of the goods unless and until payment is made.

A party has a number of **remedies when one party breached the contract**:

(i) Damages – claim for compensations for damages.

(ii) Termination – cancel the contract.

(iii) Quantum meruit – claim for work done.

(iv) Specific performance – applied when damages would be an appropriate remedy, order the party to perform an obligation.

(v) Action for the price – seeks to recover the sum owed by the party.

Right to sue for breach of contract becomes statute-barred normally after 6 years from date of the breach.

Chapter 9 Assessing creditworthiness

In last chapter, the word “assess creditworthiness” was mentioned in the credit control policy, in this chapter it will be discussed.

A credit assessment is a judgement about the creditworthiness of a customer. It provides a basis for a decision as to whether credit should be granted. If the credit risk (possibility that the debt goes bad) is high, the customers need to be managed carefully.

Companies can look at externally generated information and internally generated information when assessing the creditworthiness of customer.

Examples of **externally generated information** are from:

- (i) Bank – banks are cautious as they owe duties of care to customer and enquirer, therefore the information about customers are limited.
- (ii) Trade references – get information from customers’ suppliers, useful but careful as customers may give name of suppliers that they had purposely maintained the goodwill well.
- (iii) Credit reference agencies – supply a variety of legal and business information, this saves time for enquirer. An agency might give its own suggested rating for the customers (credit ratings). The problem of agency reports are may be out-of-date.

➤ Now try June 2009 question 4 and December 2006 question 1.

For **internally generated information**, some companies are able to employ credit analysts to examine a firm’s financial accounts. As these are historical statements, they have no guide to a customer’s future creditworthiness. However, **ratio analysis** can give some idea about customers’ position and highlight areas for further investigation. You should had learnt ratio analysis in earlier studies, here is the formula but you must be able to explain each ratios, just look carefully the formula and you will know what to say:

- Profit margin = profit before interest and tax (PBIT)/revenue
- Asset turnover = revenue/capital employed
- Return on capital employed (ROCE) = PBIT/capital employed ,
capital employed = equity + debt
- Earnings per share (EPS) = (profit after tax – preference dividend)/number of ordinary shares
- Price earnings ratio (P/E ratio) = market price per share/EPS

- Current ratio = current assets/current liabilities
 - Quick ratio = (current assets – inventories)/current liabilities
 - Receivables days/receivables' collection period =
receivables/credit sales x 365 days
 - Payables days/payables' payment period = payables/credit
purchases x 365 days
 - Gearing ratio (measure risk) = debt/equity x 100%, debt = non-
current liabilities, equity = ordinary share + reserves
 - Interest cover = PBIT/interest charges
 - Debt ratio = total liabilities/total assets
 - Bad debt ratio = bad debts/credit sales x 100%
- Now try December 2007 question 2 (b).

There are **limitations of ratio analysis** as bellow:

- (i) Not useful if without comparison.
- (ii) Based on historical information, will not take into account inflation.
- (iii) Data may not always available.
- (iv) There must be a careful definition of ratios used. For example,
should “return” equal PBIT, profit after tax or retained profit?

Another internally generated information is through **customer visits**.

Such visit has two purposes:

- Discuss any specific queries arising from credit reference data.
- Get a feel for the customer's business and how they run.

Through visit, company can also employ people to rate the creditworthiness of customers, AAA being the best and so on.

After collecting customer information from a variety of sources, it should be used effectively to come to a conclusion (whether to provide credit and the terms of credit).

We cannot have all the information that we want from a customer because of **Data Protection Act 1998 (UK)**. This act attempts to protect the individual (not corporate bodies). Individuals have certain legal rights and data holders must adhere to data protection principles. Because of that, take care while asking for information or when giving information about your customers.

Chapter 10 Monitoring and collecting debts

The most common way to monitor receivables is through **aged receivables analysis** and you may be required to prepare it. A simple example is as follow:

Aged receivables analysis as at 31 December 2010

Customer name	0-30 days	31-60 days	61-90 days	>90 days	
	Balance				
ABC	1000	300	700	0	0
DEF	2000	0	900	200	900
Total	3000	300	1600	200	900

This helps to decide what action to take about older debts (customers who pay late), this represents the actual invoices outstanding.

External sources can also be used to monitor the debts, for example press (look for any stories relevant to the company) and competitors. The earlier the customers pay, the better. **Early payment can be encouraged** by good administration, sending out invoices immediately, issue monthly statement and early settlement discount. The risk that some customers don't pay can be partly secured by default insurance. There should be efficiently organized **procedures for ensuring that overdue debts and slow payers are dealt with effectively**, some examples are:

- Issuing reminder letters
- Chasing payment by telephone
- Charge interest for late settlement
- Employ services of debt collection agency (pay commission)
- Send authorized person to visit and request payment
- Take legal action

The **basic legal procedures for collection of debts** are through contacting solicitor and they will send out "letter before action", giving the customer one last chance to pay before a court summons is issued. Some businesses might have difficulties in financing amounts owed by customers, they can employ the service of factoring. **Factoring** is an arrangement to have debts collected by a factor company which advances a proportion of the money that it is due to collect.

An **easier way to understand factoring** is through steps:

1. Company asks for factoring service from factor.
2. Factor will administer the sales ledger (control the receivables of the company) and give money in advance to company (about 80%).
3. After factor received money from receivables, factor will pay back the company an amount which has been deducted for interest.

There are **two types of factoring**:

(i) With recourse – if debt cannot be collected, factor can claim back the advance from company

(ii) Without recourse – if debt cannot be collected, factor cannot claim back the advance from company.

Invoice discounting is the purchase of trade debts at a discount. Invoice discounting enables company to raise working capital. It is similar to factoring, but invoice discounter does not administer sales ledger, with this, customers will not know that the company is employing this service. The arrangement is purely for the advance of cash.

You may be asked in exam to **determine whether it is financially viable for the company to use factoring**. To decide, you have to calculate:

1. The cost of not factoring – this means that the costs if company uses own system of managing receivables. Examples include credit controller salaries, interest charged on overdraft and administration costs.
2. The cost of factoring – Examples of costs are interest charged for advance of money, interest charged for financing remaining receivables and administration fees.

Then compare both costs, if cost of factoring is lower, then company is viable to use factoring service.

➤ Now try December 2007 question 4.

Insolvency is when company is dissolved as a legal entity, its assets are then sold to raise cash, which is used to pay creditors and any money left over (usually none) is then given to the shareholders.

Arbitration is the process where debtor and creditor enter into a written agreement to submit their dispute to a third party who assists in its resolution. The parties produce all relevant documents to the arbitrator and are then examined. The decision of the arbitrator is final. (Used when company and customer has dispute but want to save money).

➤ Now try June 2007 question 4.

Chapter 11 The banking system and financial markets

Banking system and the financial markets are key sources of business.

A **financial intermediary** brings together lenders and borrowers of money, either as broker (an agent handling a transaction on behalf of others) or as principal (holding money balances of lenders for lending on to borrowers). **Examples of financial intermediaries** are:

- (i) Bank
- (ii) Building societies – give loans to borrowers for house purchase.
- (iii) Finance houses – provide hire purchase service (chapter 13)
- (iv) Insurance companies
- (v) Pension funds
- (vi) Unit trusts
- (vii) Investment trust companies

Benefits of financial intermediation are:

- (i) Aggregation – bank can aggregate the amount of money from lenders and then lend to borrowers who need the money, this makes things easier for lenders and borrowers to lend or obtain money.
- (ii) Risk reduction – bank should be better at assessing credit risk.
- (iii) Maturity transformation – lenders may want to keep money for liquidity while borrowers may need loan (long-term borrowing), financial intermediary can facilitate short-term and long-term needs of lenders and borrowers, this is called maturity transformation.

Primary/retail/commercial/clearing banks are banks that provide money transmission service. They also provide a place where people store money and lend money on overdraft or by loan. Primary banks are commonly used by business, eg. Maybank, HSBC, Standard Chartered.

Secondary/wholesale/merchant banks involve small numbers of customers with larger deposits or requiring larger loans.

Central bank is an institution which has roles of controlling the monetary system of a country, acting as banker to the banks and government and acting as lender of last resort (lend money to banks when banks have no money for the borrowers). It also acts as agent for government in carrying out its monetary policies.

Financial markets include money markets and capital markets (chapter 14). **Money markets** are markets for short-term borrowing and lending, in wholesale amount. Money markets include a primary market and a secondary market. The primary market is used by the central bank and other approved banks and securities firms. The central bank uses it to balance shortages and surpluses of cash. **Main money market's financial instruments** are:

- (i) Deposits – deposits of money in financial intermediaries.
- (ii) Bills – short-term financial assets which can be converted into cash at very short notice, by selling them in the discount market.
- (iii) Commercial paper – short-term IOUs issued by large companies which can be held until maturity or sold to others. It is issued when company wants to raise short-term money.
- (iv) Certificates of deposits (CDs) – fixed terms deposit, customer can obtain cash before the term is up by selling CD in CD market.

Other secondary UK markets include:

- (i) Local authority markets – provide local authority bonds and bills.
- (ii) Inter bank market – unsecured loans between banks.
- (iii) CDs market
- (iv) Inter company market – companies with surplus funds lend direct (through a broker) to those which need to borrow. They do not involve financial intermediation and this is called disintermediation.
- (v) Commercial paper market
- (vi) Eurocurrency markets – eurocurrency deposit is a foreign currency deposit, a deposit of own country's funds in other countries which have different currency, eg. deposit of US dollars with a bank in London.

➤ Now try June 2008 question 4.

Chapter 12 Economic influences

Interest rates, inflation and monetary policy are all interrelated.

People's **liquidity preference** reflects their demand for money. Liquidity preference is the term used by Keynes for the desire to hold money rather than investing it. The **demand for money will be high** (liquidity preference will be high) **when interest rates are low**. This is because the speculative (investing purpose) demand for money will be high when interest rates are low.

The rate of interest actually paid in money terms is the nominal rate of interest. We can get real rate of interest (interest that included inflation) after adjusting for inflation. According to **fisher effect**:

$(1 + N) = (1 + R)(1 + I)$, N is nominal rate of interest, R is real rate of interest, I is inflation rate.

General level of interest rates will be affected by inflation, higher demand for borrowing from individuals, changes in level of government borrowing, monetary policy and the need for a real rate of return.

Money supply is the total stock of money in the economy. It is measured in a number of ways:

M0 – narrow definition of money supply, consists of notes and coins only.

M4 – broader definition of money supply, include deposits in banks and various other short-term deposits in the money market.

Government policy is divided into:

- Monetary policy – aim to influence quantity of money, interest rates and money supply in the economy.
- Fiscal policy – concerned with government spending and taxation.

Money supply (availability of credit in economy) may be controlled by :

(i) Reserve requirement – central bank sets minimum cash that commercial banks must keep. This reduces the money borrowed and therefore controlled the money supply.

(ii) Interest rate – Interest rate is the price of money, so increases in interest rate reduce the demand for money.

(iii) Quantitative control – Introduced by government to restrict the amount of money lent by commercial banks.

(iv) Qualitative control – Introduced by government not to restrict the amount of money able to lend, but to restrict the type of lending that bank can do.

(v) Open market operations – Change the monetary base by buying or selling financial securities (gilts and bills) in the open market so that it reduces bank deposits and therefore banks' ability to lend. Gilts are issued by government to borrow money.

➤ Now try December 2005 question 4.

Inflation is general increases in price. Inflation reduces the power of money. **When there is inflation, interest rates will be increased.** This is because high demand for money can cause inflation as the power of money may reduce. To lower the demand for money, interest rates will be increased.

Different rates of inflation in different countries can have an **impact on the international competitiveness of firms.** This is because the price may go up but overseas customer will not wish to pay more .

Inflation also has a **distorting effect on information about company performance,** making comparisons across different time periods difficult. In most cases inflation will **reduce profits and cash flow,** especially in the long run.

Other consequences of inflation in economy include:

Redistribution – Inflation redistributes income away from those on fixed incomes and those in a weak bargaining position, people with economic power will gain at the expense of others.

Resources – Extra resources are likely to be used to cope with the effects of inflation.

Uncertainty and lack of investment – Inflation tends to cause uncertainty among the business, especially when the rate of inflation fluctuates. It is difficult for firms to predict their costs and revenues, so they may be discouraged from investing.

Unemployment may rise – Inflation will cause the need to increase wages or salaries of employees and employers might not want to employ too many people.

➤ Now try June 2006 question 3.

Chapter 13 Short and medium-term finance

Short and medium term finance may come from a variety of sources. It is important to decide which is most appropriate for different situation.

Working capital is often financed by short and medium-term finance.

Companies often have to rely on **bank finance (overdraft and loan)**.

Before bank lends money to company, they will consider **CAMPARI**:

(i) Character of the borrower – by interview or looking at the past record.

(ii) Ability to borrow and repay – by looking at customer's financial performance to understand their likely future position.

(iii) Margin of profit – bank lends money in order to make money. It needs to ensure that it makes enough of a profit to cover the risk that it takes by lending.

(iv) Purpose of borrowing – eg. Bank will not lend money for illegal purpose.

(v) Amount of borrowing – make sure that customer is not asking for too much or more than is needed.

(vi) Repayment terms - bank must not lend money to a person or company who does not have the ability to repay it, even if it also has security for the loan. Repayment term should be set which is realistic, eg. overdrafts are repayable on demand.

(vii) Insurance against the possibility of non-payment - When lending large sums of money to an individual or to a company, the bank may ask for security for the loan.

The **security for a loan** should have the following **characteristics**:

(i) Easy to take - the security should be easy to obtain in the first place, for example, title documents to property.

(ii) Easy to value - The security should have a clearly identifiable value which is either stable or increasing.

(iii) Easy to realize - The security should ideally be readily available for sale and convert into cash.

Overdrafts are subject to an agreed limit and must be paid if bank demand for repayment (repayable on demand). It is a form of short-term borrowing. Overdraft is commonly used as a support for normal working capital, eg. to increase the current assets or to reduce other current liabilities (take advantage of attractive discounts offered by

suppliers for early settlement). The customer only pays interest when he is overdrawn (credit balance of bank account).

Loan is a type of medium-term finance. It is drawn in full at the beginning of the loan period and repaid at a specified time or in installments. The term of the loan will be determined by the useful life of asset purchased, the guidelines of the bank, government's quantitative control (chapter 12) and the results of any negotiations.

Loans can be repaid in three ways:

- (i) **Bullet** – no repayment of loan principal amount (basic amount) in the loan period, it is repaid in full at the end of loan period.
- (ii) **Balloon** – some of the loan principal is repaid during loan period, the rest of the amount will be paid at the end of loan period (maturity).
- (iii) **Amortising/straight repayment loan** - the principal is repaid gradually over the term of the loan, along with the interest payments. At the end of loan period, the principal amount will be zero.

➤ Now try December 2004 question 4.

Loan interest to be charged to customers will **depend on:**

- Level of risk
- Status of the borrower
- Security offered by the borrower
- Amount of the loan
- Purpose of the loan
- Duration of the loan

Taking out loan often include obligations for the borrower, this is called **loan covenants** (promises):

- (i) Positive covenants are promises by borrower to do something, for example provide the bank with its annual financial statements.
- (ii) Negative covenants are promises by borrower not to do something, for example not to borrow money until the current loan is repaid.
- (iii) Quantitative covenants set limitations on the borrower's financial position, for example total borrowings cannot exceed 100% of shareholders' funds.

Advantages of taking loan are:

- (i) Easier for planning because customer and bank know exactly the amount of repayment and interest charged.

(ii) No repayment on demand.

But in addition to interest payable, firm might have to pay arrangement fee, legal costs and commitment fees before taking the loan.

The relationship between bank and customer arises from a legal contract between them which it is necessary to understand. There are four types of **contractual relationship between bank and customer**:

(i) Debtor and creditor – bank is the debtor if customer deposits, customer is debtor if account is overdrawn.

(ii) Bailor and bailee – this arises when customer (bailor) delivers personal property to bank (bailee) and bank has to safeguard it. This is a safe deposit service to customers.

(iii) Principal and agent – bank (agent) may act for customer (principal).

(iv) Mortgagor and mortgagee – bank (mortgagor) asks a customer (mortgagee) to secure a loan by handing over assets such as property. If customer does not repay the loan, bank can sell the asset.

Other medium-term finance includes hire purchase, finance leases and operating leases:

Operating leases – rental agreements between lessor and lessee (person who apply for leasing), lessor supplies the asset to lessee for short period, usually less than the expected economic life of the asset. Lessor will be responsible for servicing and maintaining the leased asset.

Finance leases – an agreement between the lessor, who provides finance for the asset, and the lessee. Asset is usually supplied by a third party and lessor just provide finance. The lease has a primary period which covers all or most of the useful economic life of the asset. At the end of primary period, lessee is allowed to continue to lease the asset for an undefined secondary period with very low nominal rent. The lessee is responsible for servicing and maintaining the asset.

➤ Now try June 2005 question 4.

Hire purchase – a form of installment credit, whereby an individual or business purchases goods on credit and pays for them by installments. The supplier of the goods sells them directly to the financier (usually a finance house). The supplier then supplies the lessee with the goods. The lessee will usually be required to pay a deposit towards the purchase price of the goods. The goods remain the property of the financier until the end of the agreement, which is when lessee had paid the goods in full. The lessee makes regular payments throughout the lease period that consist of partly capital repayment and partly interest.

Chapter 14 Long-term finance

Long-term finance is usually obtained from the capital markets in the form of debt (non-current liabilities) and equity (shares) securities.

Capital markets are markets for trading in long-term finance, in the form of long-term financial instruments such as equities and loan notes.

The **stock exchange** is the main market place for larger businesses in UK. It is a market for buying and selling of stocks. There are **two main types of stock markets**, an auction market and a dealer's market.

In an auction market, individuals are buying and selling from one another and there is an auction. Specialised people will match the buyers and sellers, being sure to match the highest offered price (by sellers) to the lowest asking price (from buyers), they make profit from matching correct person.

In a dealer's market, market participants buy and sell from and to a dealer, usually known as a 'market maker'.

In the UK, the stock market is known as the **London Stock Exchange**.

There are actually two markets within this stock exchange. The first of these is the Official List. This is the top tier (level) of the market and is only available for large companies who can meet the strict listing requirements. The second tier is the Alternative Investment Market (AIM). The listing requirements for this market are less strict, hence it is used by new and smaller companies.

Remember that stock market has nothing related to inventory, stocks refer to shares.

Individuals invest in the stock market, but the most important participants are the **institutional investors** (specialise in providing capital for returns) such as pension funds, insurance companies and unit trusts:

(i) Pension funds – individuals pay pension contribution to the fund.

Fund managers generate a return from these monies by investing capital in financial and other assets. Investors usually withdraw from a pension fund when they retire.

(ii) Insurance companies – insurance companies invest premiums received by insurance policies holders (people who buy insurance). They aim to make a return on all the money they hold, just like pension companies.

(iii) Investment trusts – generate revenue by investing in the shares of other companies and the government.

(iv) Unit trust companies – a unit trust invests in a range of companies' shares. The unit trust company creates a large number of smaller units and sells to individual investors. These investors earn income from the investments and benefit (hopefully) from the increase in the value of their investments.

(iv) Venture capitalists – venture capitalists are organisations that specialise in the raising of funds for new business. The organisations provide debt and equity capital. They will usually want to have a representative on the company's board of directors. They are risk-taking investors.

Institutional investors are like intermediaries between suppliers of funds and people who demand for funds. Suppliers of funds invest in these institutions, then these institutions invest in people who demand for funds, then some amount of returns will be paid to suppliers of funds. When **deciding on the mix of debt and equity finance**, company should take into account **CCAAE**:

(i) Cost – the cost of equity is higher than the cost of debt. This is because an equity investor takes a greater risk. If the company goes into liquidation, an equity investor is the last person to be paid any money. Therefore, an equity investor expects a higher return to reflect the risk he is taking. Debt finance is cheaper as interest payments are tax deductible but dividends (for equity finance) are not. Debt finance also has lower risk.

(ii) Control of the business – equity is normally invested into the business through the issue of ordinary shares. Shareholders will share the ownership of the business and carry voting rights. Hence, a shareholder can participate in business decisions. Debt finance avoids the share of control (company will still have full control).

(iii) Amount and maturity of current debts – a significant difference between debt and equity is that debt has to be repaid, whereas equity does not. It is therefore essential to review the level of company's current debt and the time which it has to be repaid.

(iv) Availability of finance – equity finance is limited for private company as it is not allowed to offer its shares to general public. Debt finance will be more useful in this case.

(v) Effect on gearing – gearing = debt/equity. If debt increased too much compare to equity, potential lenders will then see company as a high risk investment. They will then expect better returns to reflect their increased level of risk. At worst, they will refuse to lend at all.

➤ Now try June 2004 question 4.

Flotation (going public) refers to the issue of shares by new or private company for sale to the general public. In UK, **Enterprise Investment Scheme (EIS)** is used to encourage investment in smaller company (unquoted in stock market). The individual will save some income tax for subscribing to invest in these companies. Small and medium sized enterprise will be discussed in chapter 15.

A new issue of shares involves various costs to get the issue launched.

Examples of costs of share issue include:

- Underwriting costs
- Stock exchange listing fee
- Solicitors' fees
- Advertising costs
- Accountants' fees

A **rights issue** is an offer to existing shareholders enabling them to buy more shares, usually at a price lower than the current market price. This is to maintain the voting rights of existing shareholders.

➤ Now try December 2008 question 4.

The **reasons for company to seek a stock market listing** are **AEIFT**:

(i) Access to wider pool of finance – stock market listing widens the number of potential investors. It may also improve the company's credit rating, meaning that more investors are willing to invest in it.

(ii) Enhancement of the company image – a company's image is generally improved when it becomes listed, as it is believed as being more financially stable.

(iii) Increased marketability of shares – shares that are traded on the stock market can be bought and sold in relatively small quantities at any time.

(iv) Facilitation of growth by acquisition – if a listed company wish to make an offer to takeover (buy) another company, they are in a much better position to do so than an unlisted one.

(v) Transfer of capital by other uses – a stock exchange listing gives founder members more opportunity to sell their shareholding, leaving them free to invest in other projects.

➤ Now try December 2009 question 3.

The **sources of long-term finance you need to be aware of** are:

- Ordinary shares/share capital – an equity finance. It carries voting rights and shareholders can participate in ownership of company. Shareholders receive income in the form of dividends.
- Retained earnings
- Grants (support from government)
- Venture capital
- Bonds – very large fixed interest loans.
- Eurobonds – bonds that are bought and sold on international basis.
- Preference shares – shares which have fixed percentage dividend, paid before dividend paid to ordinary shareholders. It does not have to be paid if company cannot afford it. Preference shareholders do not carry voting rights and therefore avoid reducing the control of existing shareholders. Preference share capital is not secured on the assets of the company like debt and therefore does not restrict the company's borrowing power or its use of its assets. It is not tax deductible. Issuing preference shares reduce gearing (as it increases equity).
- Loan notes/loan stock – long-term debt capital, interest is paid usually half yearly and at fixed rate. Holders of loan notes are therefore long-term creditors of the company.
- Debentures – a form of loan stock, normally containing provisions about the payment of interest and the repayment of capital.
- Convertible bonds – fixed return securities, in addition, they offer right to the holder to convert them into ordinary shares at a pre-determined date at a pre-determined price.

- Warrants – right given by a company to an investor, allowing him to buy new shares at a future date for a pre-determined price.

Warrants are usually issued as part of loan notes, purpose is to make the loan notes more attractive.

- Now try December 2006 question 4 and June 2009 question 3.

Capital structure refers to the way in which an organisation is financed, by a combination of equity and non-current liabilities (ordinary shares and reserves, preference shares, loan stock, bank loans, convertible loan notes and so on) and current liabilities, such as a bank overdraft and payables.

Chapter 15 Financing of small and medium-sized enterprises

Small and medium-sized enterprises (SMEs) often have difficulty raising finance as they are likely to be unquoted in stock market, ownership is restricted to few individuals and run very small businesses. The risks faced by SMEs caused difficulty in obtaining finance (people are afraid to invest in them).

SMEs may not know about the sources of finance available.

Significant influences on the capital structure (way of financing) of small firms are:

- Lack of separation between ownership and management.
- Lack of equity finance.

Governments from around the world provide aid for SMEs in their country. This is often in the form of **grants**. **UK government aid** includes: (i) Loan guarantee scheme – help businesses to get a loan from the bank because bank would be unwilling to lend as SMEs cannot offer the security that the bank would want.

(ii) Development agencies – encourage the start-up and development of small companies by providing assistance such as free factory accommodation and financial assistance.

(iii) Enterprise Investment Scheme (EIS) – encourage investment in the ordinary shares of unquoted companies and those who invest are qualified for reduction in income tax.

Possible sources of finance for SMEs include:

(i) Equity – owner's personal resources or those of family connections are generally the initial sources of finance. Since the business will have few tangible assets at this stage, it will be difficult to obtain equity from elsewhere.

(ii) Overdraft financing – discussed in chapter 13 but the interest may be expensive as bank takes the risk.

(iii) Bank loans – discussed in chapter 13, bank loans are likely to be available only for projects or assets which are in long-term.

(iv) Trade credit – taking extended credit from suppliers is a source of finance for many SMEs. However this might cause loss of early settlement discounts and loss of supplier goodwill.

(v) Business angel financing – Business angels are wealthy individuals who invest directly in small businesses. However the amount of money available from individual angels may be limited.

(vi) Leasing – discussed in detailed in chapter 13.

(vii) Factoring – discussed in detailed in chapter 10.

(viii) Venture capital – venture capitalists are prepared to invest in new businesses and specific expansion projects. However they will be less interested in providing the money required to finance running expenditure and working capital requirements (in this case, overdraft will be more suitable). Also, venture capitalists will want to involve in running the business because of their need to protect their investment.

➤ Now try June 2006 question 4.

Venture capitalists will take into account certain factors in deciding whether or not to invest:

(i) The nature of company's product – the selling potential of products.

(ii) Expertise in production – technical ability to produce efficiently.

(iii) Expertise in management – commitment, skills and experience.

(iv) Market and competition – threat from current competitors and also future new competitors.

(v) Future profits – they will want to see the detailed business plan.

(vi) Board membership – they will ensure that they are part of representatives of the board of directors and have say in future strategy.

(vii) Exit routes – they will consider potential exit routes in order to realise the investment.

➤ Now try December 2007 question 3.

Chapter 16 Decision making

You would have learnt short-term decision-making in earlier studies, now you can apply what you learnt in longer questions.

The **relationship between cost behaviour and time** can be summarised as follow:

- Costs will be fixed, variable or semi-variable in short time period.
- In longer term, all costs will tend to change in response to large changes in activity level.

You are assumed to have good knowledge in absorption and marginal costing. Marginal costing provides more useful decision-making information than absorption costing as it uses contribution concept.

➤ Try June 2010 question 4 (d).

You may be asked to identify relevant costs from information given, if the cost is not relevant, you should state it rather than leave it.

Relevant costs are future costs, incremental costs and cash flows. Other terms can be used to describe relevant costs:

(i) Avoidable cost – costs which can be avoided if the related activity did not exist.

(ii) Differential cost – difference in relevant cost between alternatives. Eg. If option A will cost an extra \$300 and option B will cost an extra \$360, the differential cost is \$60.

(iii) Opportunity cost – benefit forgone/contribution loss by choosing one option instead of another. Eg. If this job is not undertaken, machine can be used to generate \$100 from other job, opportunity cost of doing this job is \$100. Opportunity cost is one of the most important relevant costs which examiner will use it to trick!

There are some **rules in identifying relevant costs for material and labour**, some questions will be asked:

(i) Material – stock available? If no, relevant cost is purchase cost, if yes, move on to next question. Will the material be replaced/used? If yes, relevant cost is purchase cost, if no, the relevant cost will be the higher of resale value and value from alternative use.

(ii) Labour – any spare capacity (free time)? If yes, relevant cost is zero, if no, move on to next question. Can hire people? If yes, relevant cost is the basic rate of hired people, if no, relevant cost is the lower of overtime and opportunity cost (take people from other work to do this work, other work's income will be the opportunity cost) + basic rate. A number of terms are used to describe costs that are irrelevant for decision making (**non-relevant costs**):

(i) Sunk cost – past/old cost.

(ii) Committed cost – future cash outflow that will be incurred anyway.

(iii) Notional cost/imputed cost – imaginary cost, eg. notional interest charges on capital employed.

Unless you are given special case, if not, assume the following:

- **Variable costs will be relevant costs.**
- **Fixed costs are irrelevant to a decision.**

Only attributable fixed costs (increase if certain extra activities are undertaken) are relevant, general fixed overheads are not relevant.

If there is scarce (limited) resource, the total relevant cost is opportunity cost + variable cost of scarce resource.

A good question to try on is the T7 December 2004 question 2.

Some of the **assumptions are made in relevant costing**:

- Cost behaviour patterns are known.
- Amount of fixed costs, unit variable costs, sales price and sales demand are known with certainty.
- Information is complete and reliable.

A limiting factor is a factor which limits the organisation's activities.

There are 4 types of short-term decisions to learn. You would have know how to make **product mix decisions**, here is some recall:

1. Identify limiting factor.
2. Calculate contribution per unit for each product.
3. Calculate contribution per limiting factor.
4. Rank products (first for product with highest contribution per limiting factor).
5. Optimal production plan, start with the first ranked product until scarce resource is used up.

Company will have **make or buy decision** when they can make the product or buy from outside (outsource). There are two possibilities:

(i) Have enough resources – in this case, to decide whether or not to buy outside, take purchase cost per unit from outside – variable cost per unit, if positive, it means saving cost per unit if make, company shall not buy.

(ii) Don't have enough resources, must buy some – in this case, company has to decide which materials to buy in order to minimise costs, for each materials, take purchase cost per unit from outside – variable cost per unit and then divide by limiting factor to get saving cost per limiting factor, company should buy the materials with lowest saving cost per limiting factor.

Shut down decisions involve deciding whether or not to shut down a factory, department or product line. Company should not shut down factories which can help to generate profit in the future.

One-off decision concerns a contract which would utilise spare capacity but would have to be accepted at lower price. You can assume that contract will be accepted if it increases contribution and hence profit.

The main argument in favour of opportunity costing is that management are more aware of how well they are using resources, and whether resources could be used better in other ways.

The main drawback to opportunity costing is a practical one. It is not always easy to recognise alternative uses for certain resources and put an accurate value on opportunity cost. It is only likely to be accurate in situations where resources have an alternative use which can be valued at an external market price.

Chapter 17 CVP analysis

CVP analysis/breakeven analysis is the study of interrelationships between costs, volume and profit at various level of activity. Make sure that you understand how to calculate the breakeven point, the C/S ratio, the margin of safety and target profits, and can apply the principles of CVP analysis to decisions about whether to change sales prices or costs. You should also be able to construct breakeven charts and profit/volume charts. You should have learnt all in earlier studies, so, relax here.

Breakeven point is the activity level at which there is no gain no loss, calculated as fixed costs/contribution per unit for units figure, fixed costs divide by C/S ratio to get \$ figure. C/S ratio = contribution per unit/selling price per unit or total contribution/total sales. At breakeven point, total contribution = fixed costs.

Margin of safety = budgeted sales – breakeven sales, it is an indication of safe (no loss) if sales are within margin of safety.

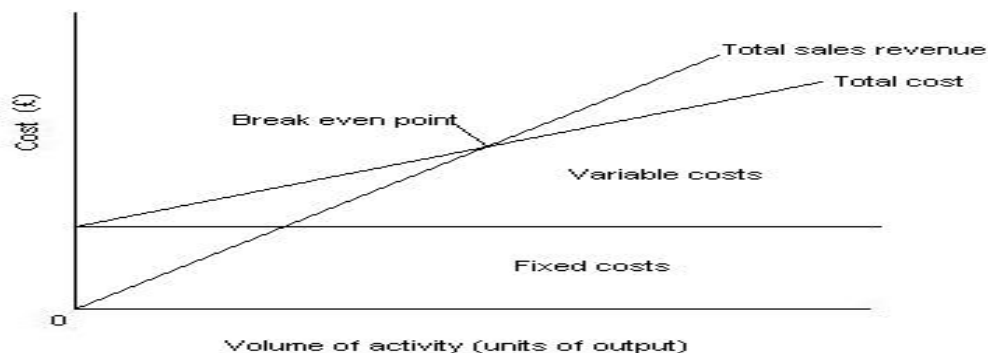
If asked to assess performance on the basis of C/S ratio, margin of safety and breakeven point, you need to consider the following factors:

- **A low margin of safety indicates a high level of risk.**
- **The closer the breakeven point to budgeted/recent sales levels, the higher the risk.**
- **The higher the C/S ratio, the faster profits will grow.**

Targeted sales (units) = (fixed costs + target profit)/contribution per unit.

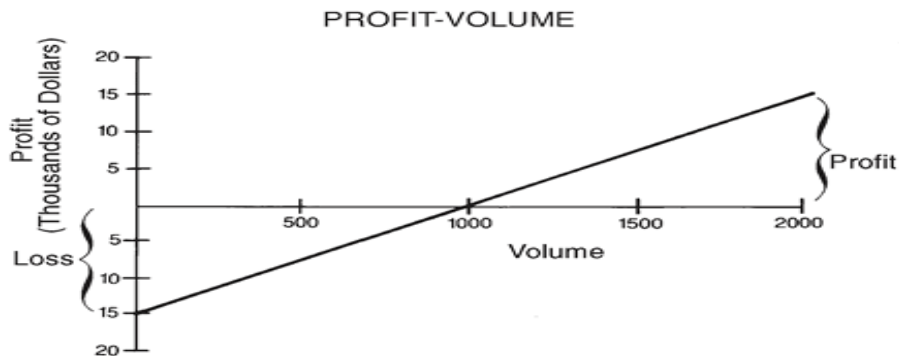
➤ Now try June 2010 question 4.

The breakeven point can also be determined graphically using breakeven chart. A **breakeven chart** is a chart which shows approximate levels of profits or loss at different sales volume levels within a limited range. The chart will look like this:



Break-even chart

Y-axis shows costs and x-axis shows sales volume. First step is to draw the fixed costs line and then only the total costs line. The intersection between total sales revenue and total cost is breakeven point. Margin of safety will be the area between breakeven point and total sales revenue. The **profit/volume (P/V) chart** provides simple illustration of the relationship of costs and profits to sales. The chart will look like this:



Y-axis shows profit/loss and x-axis shows sales volume. The line will start from fixed costs point (\$15000), then put a point on according to profits earned from sales (in here, at sales of 2000 units, profits are \$15000), then join the line, the intersection in x-axis is breakeven point. One more thing to note here, the gradient of this line will be the contribution per unit (or C/S ratio if sales value is used to draw this graph).

Do not forget that CVP analysis does have **limitations**:

- (i) It is only valid within a “relevant range” of volumes.
- (ii) It measures profitability, but does not consider the volume of capital employed to achieve such profits.
- (iii) Assume that all costs can be classified as either fixed or variable.
- (iv) Assume fixed costs are same in total and variable costs are the same per unit at all levels of output, this is wrong.
- (v) Assume that sales prices will be constant at all levels of activity.
- (vi) Production and sales are assumed to be the same.

Breakeven analysis should be used with full awareness of its limitations, but can usefully be applied to **provide simple and quick estimates of breakeven volumes or profitability** within a “relevant range” of output/sales volumes.

➤ Now try December 2009 question 2.

Chapter 18 Capital expenditure budgeting

Capital expenditure budget is essentially a non-current asset purchase budget, and it will form part of longer term plan of a business. Regular and minor non-current asset purchases may be covered by an annual allowance provided for in the capital expenditure budget. Major projects will need to be considered individually and will need to be fully appraised.

Capital expenditure is expenditure which results in the purchases or improvement of non-current assets.

Revenue expenditure is expenditure which is incurred for either of the following reasons:

- Trading purpose – eg. selling and distribution expenses.
- Maintain the existing earning capacity of non-current assets.

Most organizations keep an **asset register**. This is a listing of all non-current assets owned by the organization broken down by department, location or asset type. Difference between asset register and actual non-current assets present (and general ledger) must be investigated. Asset register may include details like description of asset, location of asset, purchase date, cost, depreciation method, estimated useful life, disposal proceeds and accumulated depreciation.

Steps involved in project appraisal are:

- (i) Initial investigation – Firstly, a decision must be made as to whether the project is technically and commercially feasible. This involves assessing the risks and deciding whether the project is in line with the company's long-term strategic objectives.
- (ii) Detailed evaluation – a detailed investigation will take place in order to examine the projected cash flows of the project. Sensitivity analysis is performed and sources of finance will be considered. Investment appraisal will take place at this stage.
- (iii) Authorisation – for significant projects, there must be authorisation from the company's senior management and Board of Directors. The projects will only start if it is authorised.
- (iv) Implementation – responsibility for the project is given to a project manager or other responsible person. The resources will be made available for implementation and specific targets will be set.

(v) Project monitoring – now the project has started, progress must be monitored and senior management must be kept informed of progress. Costs and benefits may have to be re-assessed if unforeseen events occur.

(vi) Post-completion audit – at the end of the project, an audit will be carried out so that lessons can be learned to help future project planning.

Chapter 19 Methods of project appraisal

A long-term view of benefits and costs must be taken when reviewing a capital expenditure project. Some **non-financial factors** should also be taken into account before making an investment decision:

- (i) Legal issues – possible legal actions should be considered.
- (ii) Ethical issues – Unethical actions could be damaging.
- (iii) Changes to regulations
- (iv) Quality
- (v) Level of competition – investment in new product may be matched by a competitor during the product's life-time, affecting revenues.

Key methods of project appraisal are accounting rate of return (ARR), payback period, net present value (NPV), discounted payback period and internal rate of return (IRR). Relevant and non-relevant costs (chapter 16) should be used when applying these methods.

ARR or return on investment (ROI) calculates estimated average profits/estimated average investment x 100% to evaluate an investment.

Projects with higher ARR would be chosen. **Advantages of ARR** are:

- (i) A widely understood and used method, it is in percentage as well.
- (ii) Use readily available accounting data.

Disadvantages of ARR are:

- (i) Based on accounting profits (accrual concept) rather than cash flow which included costs like depreciation, therefore may not be relevant to the project performance.
- (ii) Does not take into account the timing of cash inflows and outflows.

The **payback period** is the time taken for the initial investment to be recovered by cash inflows. Eg. an investment would cost \$100 00 and generate cash inflows of \$3000 per annum, what is the payback period:

Answer: Year	cash flows (\$)	accumulated cash flows (\$)
0	(\$10000)	(\$10000)
1	\$3000	(\$7000)
2	\$3000	(\$4000)
3	\$3000	(\$1000)
4	\$3000	\$2000

Payback period = 3 years + 2000/3000 x 12 months = 3 years 8 months.

The project with shorter payback period will be chosen.

Advantages of payback period are:

- (i) It is easy to calculate and understand
- (ii) Widely used in practice as a first screening method (fast check).
- (iii) Identify quick cash generating projects.

Disadvantages of payback period are:

- (i) Total profitability is ignored.
- (ii) Time value of money is ignored.
- (iii) Does not take into account positive cash inflows occurring after the end of the payback period.

Time value of money is an important consideration in decision-making. I will use 10 years as example. Most people would prefer \$100 today rather than \$100 in 10 years' time. Because \$100 will probably buy you less in 10 years' time than it will today. **Discounting helps us to understand how much we would need to invest today if we wanted to receive \$100 in 10 years' time, given a certain rate of interest.**

Discounting is a method of converting future cash flows into present value (the value now), you need to know how to use the present value table which you should have know it. **Compounding** is simply the reverse of this. It helps us to calculate the future sum that will be received if the \$100 were invested today for 10 years. Compounding is therefore a method of converting present value to future value by using the formula: $F = P(1 + r)^n$, F is future value, P is amount invested now, r is rate of interest in decimal, n is number of years. Eg. the cost of investment is \$2000 now at 10%, what would the investment be worth after 5 years?
Answer: $F = \$2000(1 + 0.10)^5 = \3222 .

By taking into account the time value of money and discounting the cash flows, projects can be appraised before the investment decision is made. Discounted cash flow (DCF) can be used in NPV method, discounted payback method and IRR.

NPV method calculates the present value of all cash flows, and sums them to give the NPV. If this is positive, then the project is acceptable. NPV method is very important and is examined in every sitting, you should be confident dealing with it. Of course, you must know how to use present value table and annuity table. When performing NPV calculations, the **following approach should be taken** :

- (i) Identify the relevant cash inflows and outflows of the project, not forgetting the initial investment.
- (ii) Add up the cash inflows and outflows for each year, then discount each of the cash flows to its present value, using the company's cost of capital (required rate of return) – discount tables will be provided.
- (iii) Calculate the net present value of the project by adding all present values for each year.
- (iv) Decide whether or not the project should be accepted (accept if positive NPV).

➤ Now try June 2005 question 2, December 2007 question 1

Advantages of NPV are:

- (i) Maximising shareholder wealth.
- (ii) Takes into account the time value of money.
- (iii) Based on cash flows which are less subjective than profit.
- (iv) Shareholders will benefit if a project with a positive NPV is accepted.

Disadvantages of NPV are:

- (i) Can be difficult to identify an appropriate discount rate (this depends on cost of capital/required rate of return).
- (ii) Cash flows are assumed to occur at year ends only.
- (iii) Some managers are unfamiliar with the concept of NPV.

The **discounted payback method** is similar to payback method but it uses present values instead of cash flows.

➤ Now try June 2005 question 3.

Annuities are annual cash flows which is the same amount every year for a number of years. When there is annuity to be discounted, there is a shortcut method of calculation which is using the annuity table (provided in exam). You should use annuity table whenever possible to save time.

➤ Now try June 2009 question 1 and June 2006 question 1.

The **IRR** tells us the rate at which the NPV of a project is zero. There are **four steps to an IRR calculation**:

1. Calculate the project's NPV at cost of capital (required rate of return).
2. If the above NPV is positive, choose a higher discount rate (this may be given in the exam) and calculate the NPV again. If the above NPV was

negative, choose a lower discount rate. This is because you need a positive and a negative NPV.

3. You must now calculate the IRR by using the following formula:

$$\text{IRR} = A + [(a/a - b) \times (B - A)]$$

Where A is the lower discount rate and B is the higher rate, a is the NPV at the lower rate and b is the NPV at the higher rate.

4. The IRR must then be compared to the company's cost of capital (required rate of return). If IRR is higher than the required rate of return, the project should be accepted. If it is lower than the required rate of return, the project should be rejected.

For example, company's cost of capital is 10% and considering a project. NPV using 10% rate of return is \$1000, after calculating NPV at rate of return of 15%, NPV = (\$3000), calculate IRR.

Answer: $\text{IRR} = 10 + [(1000/1000 + 3000) \times (15 - 10)] = 11.25\%$, it is higher than cost of capital of company and therefore the project is acceptable.

Sometimes there is a **mutually exclusive project** where NPV shows positive but IRR is lower than cost of capital. In this case, we will take NPV as priority and accept the project.

Advantages of IRR are:

- (i) Take into account the time value of money.
- (ii) Results are expressed as simple percentage, easier to understand.
- (iii) Indicates how sensitive calculations are to changes in interest rates.

Disadvantages of IRR are:

- (i) May be confused with ARR.
- (ii) Problems occur if there is mutually exclusive project.
- (iii) Some managers are not familiar with IRR method.

➤ Now try June 2004 question 1 and June 2007 question 1.

Capital budgeting decisions in the public sector are not often made with the intention of earning profits. Social costs and social benefits can be very important in public sector investment appraisals.

End of notes, now do any past year question that is left and you are well-prepared.