



CIMA
Strategic Level – F3
FINANCIAL STRATEGY
(REVISION SUMMARIES)

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Chapter

1

Introduction to Financial Strategy

Key summary of chapter “developments in external reporting”

Financial strategy can be defined as a course of action including the specification of resources required, achieving a specific objective. An organisation has to identify its objectives. Objectives are the goals or aims of an organisation, and identify what the organisation wants to achieve and what its mission is. For most profit making organisations, the main objective is to maximise shareholder wealth.

Maximising shareholder wealth is done through increasing profits which can be achieved through:

- Increasing profitability, through cost reduction and efficiency programs
- Investing in profitable projects or investments
- Expanding through new products and new markets
- Acquiring or merging with other organisations

The objectives of the organisation must incorporate all stakeholders and the organisation has to balance the needs of all interested parties.

Once the objectives have been identified, the organisation must then plan to achieve those objectives. This will involve at looking at **various options available, analysing** those options, **choosing** the appropriate one by ensuring there are enough funds and resources available to implement the option or options. Once implementation commences, it is important to monitor and control the chosen option to ensure it is consistent with objectives. This is mainly done through performance measures.

There are 3 key decisions in financial management.

- Investment
- Financing
- Dividends

These 3 key decisions are inter-related

Financial objectives

The main financial objective is to maximise shareholder wealth, by maximising profits and cash flows, and giving maximum return. To achieve the capital growth of the share price, the company must be able to generate profits. One way that this is done is by investing in projects, which give the maximum return.

Non-financial objectives

The influence of the various parties with interest in the firm results in firms adopting many non-financial objectives.

Stakeholders

To ensure that the objectives of the company look after everybody's interest, the stakeholders have to be recognised.

Stakeholders are those organisations or people that have an interest in the organisation, these interests are varied and for many reasons. They can be a source of potential conflict for the successful accomplishment of the organisation's strategy and goals. The essential skills of negotiation and communication are needed by the organisation's management team, in order to resolve conflicts that may exist between the strategic aims of the organisation and the goals, values and interests of its various stakeholders.

Not for profit and public service organisations

These types of organisations include public sector services, government departments, charities and voluntary organisations. The objectives of these organisations are not concerned with making a profit but with ensuring they provide their best service.

Whereas profit making organisations have access to finance if they require it (debt and equity), non profit making organisations have a major set back in that they have limited funds. These funds must be used to their best ability and to last for as long as possible.

Demand is also a factor. For profit making organisations, demand is a limiting factor (this restricts their growth). For non profit making organisations, demand is usually too much and it's their own resources which is the limiting factor. As demand is too high, this will affect the quality of service.

Constraints to policy formulation and action)

There are many factors which will affect the decision taken in financial strategy formulation. These factors will impact on the type and amount of finance acquired and the type of investment decision made. These factors can be grouped as follows:

- Economic factors ó interest rates, inflation rates and exchange rates
- External constraints ó regulation imposed on organisation
- Internal constraints ó self imposed
- Corporate governance ó how organisations are run
- International issues ó investing overseas has an added layer of risk

Current and emerging issues in financial reporting

Corporate collapses and accounting scandals have resulted in pressure for more information from the companies.

Operating and financial review (OFR)

The OFR gives details of the organisations past results and future plans, and is prepared by the senior management. The OFR is not mandatory but most listed companies produce it as part of their annual accounts. In the UK the government is intending to make the OFR mandatory for all listed companies and wants them to produce and publish it as part of their annual accounts.

Global reporting

The global reporting initiative (GRI) was set up by the US and environmental bodies including the UN environment programme. The guidelines set out in the GRI apply to all entities that produce financial information, and its intention is to develop sustainable reporting practices to make all entities more comparable and to provide important non financial information.

Environmental reporting

Organisations have a huge impact on the environment, ranging from industrial pollution, gas emissions and mining. Therefore they must be accountable for how they deal with environmental issues, and in some cases are required by law to do so.

Social and ethical reporting

Social and ethical reporting can be both financial and non financial and covers a broad range of issues.

The sociological environment is the environment that the organisation deals with. It employs human resources and has an impact on the society with its decisions. It can bring wealth to the community but it could also bring pollution and destruction.

Ethical reporting is increasingly becoming important, as a large number of investors will only invest in organisations adhering to ethical rules. For example unethical companies may exploit child labour, or sell arms to worn torn countries. The ethical investors group reports on unethical organisations.

Human resource accounting

Human resource accounting involves measuring and disclosing the value of employees or human resources to the organisation. The basic principle of human resource accounting is that, employees are assets, and competitive advantage is gained by effective use of people.

Chapter 2

Analysing Performance

Key summary of chapter “analysing performance”

Financial analysis

The objective of financial statements is to provide information to all the users of these accounts to help them in their decision-making. Note that most users will only have access to published financial statements.

Interpretation and analysis of financial statements involves identifying the users of the accounts, examining the information, analysing and reporting in a format which will give information for economic decision making.

Ratios can be grouped into 3 main areas:

- 1 Performance - how well the business has done (profitability)
- 2 Position - short term standing of the business (liquidity)
- 3 Potential - what the future holds for the business

Exam technique for analysing performance

The following steps should be adopted when answering an exam question on analysing performance:

- Step 1** Review figures as they are and comment on them.
Step 2 Calculate relevant ratios according to performance, position and potential (if possible)

1 Performance (profitability) – how well has the business done

Return on capital employed (ROCE)	$\frac{\text{Profit before interest \& tax (PBIT)}}{\text{Capital employed (CE)}} \times 100\%$
Operating profit margin	$\frac{\text{PBIT}}{\text{Turnover}} \times 100\%$
Asset turnover	$\frac{\text{Turnover}}{\text{Total assets}} \quad (\text{number of times})$
(Operating profit margin x asset turnover = ROCE)	
Return on equity (ROE)	$\frac{\text{Profit before tax}}{\text{Shareholder funds (capital + reserves)}} \times 100\%$

2 Position (liquidity)– short term standing of the business

Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$ (number of times)
Quick ratio	$\frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$ (number of times)
Gearing - equity	$\frac{\text{Debt capital}}{\text{Equity (shareholders funds)}} \times 100\%$
Gearing – total	$\frac{\text{Debt capital}}{\text{Debt + equity (total capital)}} \times 100\%$
Interest cover	$\frac{\text{Profit before interest & tax (PBIT)}}{\text{Interest paid}}$ (number of times)
Trade payable days	$\frac{\text{Trade payables}}{\text{Cost of sales (or purchases)}} \times 365 \text{ days}$
Inventory days	$\frac{\text{Inventory}}{\text{Cost of sales}} \times 365 \text{ days}$
Trade receivable days	$\frac{\text{Trade receivable}}{\text{Sales}} \times 365 \text{ days}$
Working capital cycle	Trade receivable days + inventory days – trade payable days
3 Potential (investor) – what investors are looking at	

Earnings per share (EPS)	$\frac{\text{Profit after tax}}{\text{Number of shares}}$
P/E ratio	$\frac{\text{Share price}}{\text{Earnings per share}}$
Dividend yield	$\frac{\text{Dividend per share}}{\text{Share price}} \times 100\%$
Dividend cover	$\frac{\text{Earnings per share}}{\text{Dividend per share}}$

Step 3 Add value to the ratios by:

Interacting with other ratios and giving reasons

- a) State the **significant fact or change** (i.e. increase or decrease)
- b) **Explain the change** or how it may have occurred by looking at the business activities and other information.
- c) Explain the significance of the ratio in terms of **implications for the future** and how it fits inwith the user's needs.
- d) **Limitations** of the ratio analysis. Look at the 2 figures used to compute the ratio and criticise them. Also look at other factors which may distort the information (creative accounting, seasonal fluctuations etc.)

Limitations of ratio analysis

A ratio on its own is meaningless. Accounting ratios must always be interpreted in relation to other information.

Ratios based on historic cost accounts do not give a true picture of trends, because of the effects of inflation and different accounting policies. Investors' ratios particularly have a disadvantage, because investment means looking into the future and the past may not always be indicative of the future.

Comparing the financial statements of similar businesses can be misleading.

Different accounting policies that can be adopted will have an impact on the ratios calculated and therefore make comparisons more difficult. The different accounting policies affect the income statement and the statement of financial position and these impacts on all the major ratios like ROCE and gearing.

Creative accounting (also known as aggressive accounting or earnings management) distorts financial analysis of company accounts. Creative accounting is done by organisations to perhaps enhance the balance sheet or performance by either exploiting loopholes in the accounting standards or deliberately not showing certain items. Listed companies especially have added pressures for the maintenance and increase of share prices; this obviously has an impact on the valuation of the company. As share prices are stipulated by the market, the information fed to the market can be manipulated to ensure this.

Interpretation of financial obligations included in the accounts

Financial obligations reported in the accounts need to be understood properly. These include redeemable debt, contingent liabilities and earn out arrangements.

Business failure

Ratio analysis can help to identify companies, which are under performing and are in danger of failure. This will be crucial for the initial assessment of an organisation being considered for a takeover or merger.

Chapter

3

Planning & Forecasting

Key summary of chapter “planning and forecasting”

Once the objectives have been agreed upon, the planning stage begins. Planning involves formulating a strategy, evaluating the options and then selecting the appropriate ones. The chosen option is then implemented. Control is also an important aspect of planning, as at every stage of planning, control procedures have to be put in place to ensure that it is in line with the strategic objectives.

Three types of planning can be identified:

- Strategic planning - (corporate strategy)
- Technical planning - (business strategy)
- Operational planning - (functional strategy)

Forecasting financial statements

Forecasting the **statement of financial position, income statement and statement of cash flow** is a highly examinable. Information is given on a base year (which could be the current year), and the effects of certain proposed policies on the financial statements is examined.

Two types of changes in variables can happen:

- **Economic variables.** The effects of changing interest rates and inflation rates
- **Business variables.** The effects of changing volume of sales, costs and margins

Working capital management

Working capital is the capital available for conducting the day-to-day operations of the business. It consists of current assets and current liabilities. Working capital can be viewed as a whole but interest is usually focussed on the individual components - inventories, trade receivables etc.

Managing of working capital is the administration of current assets and current liabilities. Effective management of working capital ensures that the organisation is running efficiently and therefore saving on costs. For example having a large volume of inventories will have two effects, firstly there will never be stock outs, so therefore the customers are always satisfied, but secondly it means that money has been spent on acquiring the inventories, which is not generating any returns (i.e. inventories is a non productive asset), there are also additional costs of holding the inventories (i.e. warehouse space, insurance etc).

A company must decide on a policy on how to finance its long and short-term assets. 3 types of policies exist

- Conservative policy
- Moderate policy
- Aggressive policy

Chapter

4

Long term Finance

Key summary of chapter “long term finance”

Sources of long term finance can be grouped into either debt or equity. Long term finance is known as the **capital** of the company.

Long term finance is more expensive than short term finance. The type of long term finance chosen by the organisation will have an impact on the cost of capital and therefore the valuation of the company. Careful consideration is required before deciding which one to go for:

- Length of time finance is required
- Cost of finance
- Size of company
- Gearing effect
- Risk
- Control
- Speed of finance

Raising equity finance

The main methods of issuing new shares are:

- (i) Offer for sale
- (ii) Placing
- (iii) Rights issue

Preference shares

Preference shares are shares, which give the holder a fixed rate of dividend. These shares do not carry any voting rights but the dividends are paid in preference to ordinary shareholders. Preference dividends are an appropriation of the profits and therefore are not tax deductible (which is a distinct disadvantage for the company).

Warrants

Warrants are rights for an investor to subscribe for new shares at a future date at a fixed pre-determined price (the exercise / strike price). Warrants are usually issued with unsecured loan stock, to make it more attractive to investors.

Raising debt finance

Debt finance can be split into short and long term. Long term debt finance consists of debentures, loan stock, bonds and long term bank loans. Short term debt finance consists of short term bank loans, overdrafts, leasing and hire purchase. There are also complex forms of debt finance which include convertibles.

Lease or buy decisions

Companies have to decide whether to lease or buy an asset for its operations. The two methods are evaluated using discounted cash flow techniques (also known as net present value NPV) and the cheapest one is selected.

International debt finance

Organisations dealing internationally can borrow finance from abroad. Large companies can borrow funds from the euro markets. These euro markets offer financing in a different currency to the one the company normally deals with. ‘euro’ does not mean just Europe, it means outside the country.

Euro markets include the euro currency market and the euro bond market.

Chapter

5

Cost of Capital & Capital Structures

Key summary of chapter “cost of capital and capital structures”

The cost of capital is the cost to a company of having the capital structure that they have in their statement of financial position (balance sheet).

Cost of equity capital

The cost of equity is the cost to the company of providing equity holders with the return they require on their investment. Note that the shareholder's rate of return is the cost of equity.

$$\begin{array}{lll} \text{Company's point of view} & = & \text{cost of equity} \\ \text{Shareholder's point of view} & = & \text{rate of return} \end{array}$$

There are 2 ways of establishing cost of equity:

- Dividend valuation model (DVM)
- Capital asset pricing model (CAPM)

$$\text{DVM without growth} \quad ke = \frac{d}{P_0}$$

$$\text{DVM with growth} \quad ke = \frac{d_0(1+g) + g}{P_0}$$

CAPM is another way of establishing cost of equity. It incorporates the risk involved with the company. The dividend valuation model doesn't consider the important factor of risk.

$$Ke = R_f + (R_m - R_f) \beta$$

Cost of irredeemable debt

No tax

$$kd = \frac{i}{P_0}$$

With tax

$$kd(\text{net}) = \frac{i(1-t)}{P_0}$$

Cost of redeemable debt

With redeemable debt, the debt will be paid (usually at its par value) at some point in the future. The cost of redeemable debt can be calculated using the present value calculations of all cash flows, and using internal rate of return (IRR) method to find the rate implicit.

Cost of irredeemable preference shares

The cost of preference share capital is calculated in a similar manner to cost of irredeemable debt. As dividends payable on preference shares is an appropriation of profits, there are no tax adjustments.

$$kd \text{ (pref)} = \frac{d}{P_0}$$

Weighted average cost of capital (WACC)

Weighted average cost of capital is the average cost of the company's finance (equity, debentures, bank loans), weighted according to the proportion each element bears to the total pool of capital.

Procedure to calculating WACC

- Find cost of each source of capital
- Calculate weights for each source of capital. (using **market values**)
- Multiply each source of capital costs with its weighting.
- Add the weightings

Exam formula (weighted average cost of capital WACC)

$$k_o = k_e \times \left\{ \frac{V_e}{V_E + V_D} \right\} + k_d \times \left\{ \frac{V_d}{V_E + V_D} \right\}$$

The theory of capital structure and WACC

A company should aim to minimise its WACC, in order to maximise its profits. Having a right mix of debt and equity in its capital structure can do this, but how much? The cost of debt is generally lower than the cost of equity, due to debt interest being tax deductible and lower risk.

It would therefore appear that in order to minimise WACC, a company should have as much debt as possible, and aiming for very high gearing levels. But in reality this is not a good thing as more debt means more risk to shareholders as more of the profits are eaten up in interest payments. This means a higher cost of equity, so effectively cheaper debt finance leads to higher cost of equity.

There 2 main theories on the effect of gearing on WACC, the traditional theory and Modigliani and Miller's (M&M) net operating income approach.

The traditional theory states that the WACC will be lowest at a certain level of gearing. This level will represent the optimal capital structure.

M&M state that geared companies have an advantage over un-gunned companies; they pay less tax (as interest payments are deductible for tax purposes and dividends are not). This payment of less tax makes their market value greater (through increased profits) and hence lowers WACC.



Chapter

6

CAPM

Key summary of chapter “capital asset pricing model - CAPM”

The CAPM (capital asset pricing model) was developed to take into consideration, the risk involved in shares. Debt finance is normally cheaper than equity finance, this is because interest is fixed and takes precedence over dividend payments, which makes debt finance lower risk than equity.

Portfolio theory

Investors and organisations want the maximum return for the level of risk taken. H M Markowitz, an economist stated in the 1950s, that an investor can achieve better returns by holding a combination of investments.

The CAPM says that total risk can be split into 2 elements, systematic and unsystematic. Systematic risk can further be split into business and financial risk:

Unsystematic risk	This is the risk that is unique to the businesses industry. This can be eliminated by diversification (portfolio theory).
Systematic risk	This is the market risk and relates to the economic environment the business operates in (interest rates, exchange rates, prices etc). In CAPM this is measured by the β .
Business risk	This is the risk associated with the particular activities undertaken by the organisation that is being invested in.
Financial risk	This is the risk due to the organisation having debt in its capital structure.

Exam formula (cost of equity using CAPM)

$$ke = R_f + (R_m - R_f) \beta$$

CAPM and M&M- gearing and un-gearing β

CAPM can be used to find a suitable discount rate for an individual investment/division, estimating the beta value of the investment by using the beta of a company in a similar area of business. However different companies can have different debt structures, which affect their betas. M&M show how this problem can be solved by un-gearing and then re-gearing the beta using their equation.

Exam formula (un-gearing β)

$$\beta_a = \beta_g \times \left\{ \frac{V_e}{V_e + V_d(1-t)} \right\} + \beta_d \times \left\{ \frac{V_d(1-t)}{V_e + V_d(1-t)} \right\}$$

$\beta_e = \beta_g$ = geared beta / equity β and measures both business and financial risk

$\beta_a = \beta_u$ = un-gearred beta / asset β and measures business risk only.

If β_d is assumed to be zero (a common assumption), then the equation again simplifies to:

$$\beta_a = \beta_g \times \left\{ \frac{V_e}{V_e + V_d(1-t)} \right\}$$

Re -gearing β_a

Once the asset β of a company in the similar industry has been calculated, this β_a can be geared to reflect the company's own capital structure (that is gearing ratio) as follows:

No beta for debt

$$\beta_g = \beta_a \times \frac{\{V_e + V_d(1-t)\}}{V_e}$$

With beta for debt

$$\beta_g = \beta_a + \{(V_d(1-t) / V_e) \times (\beta_a - \beta_d)\}$$

Chapter

7

Dividend Policies, EMH & Treasury Department

Key summary of chapter “Dividend policies, EMH & Treasury Department”

Dividend policies

The returns a shareholder receives on their shares are dividends and capital growth. As capital growth is long term, dividends are an important source of cash income, so therefore investors will place a great deal of importance on a company's ability to maintain a consistent dividend policy. Above all dividends have to be paid out of cash, so liquidity of the company is important.

Types of dividend policies

- Stable policy
- Constant payout ratio
- Residual dividend policy

There are 2 theories regarding dividend policy and its impact on the share price of that company. The traditional theory states that dividends are irrelevant and M&M's irrelevance theory.

Predicting share prices

The price of shares is very unpredictable and is dependant on many factors. This is the reason why investing in shares is risky as there is the potential of no gain.

Share prices prediction has been undertaken by many people:

- Chartists (technical analysis)
- Fundamental analysts
- Random theory

Efficient market hypothesis

The stock market must be efficient in pricing the shares. The stock market must incorporate as much information as is possible to truly reflect the company's position. This will give the investors a fair price to buy and sell their shares.

Three forms of efficiency are:

- Weak form
- Semi-strong form
- Strong form

The treasury function

With the complex ways of raising finance (debt, equity, convertibles etc), it is important that the appropriate form is chosen for the company's strategy implementation. The form of finance and the risk involved with that finance needs to be assessed and the effect it will have on the overall value of the firm (cost of capital). The treasury function will also deal with financial derivatives which large organisations deal in to reduce risk of foreign currency exchange rates and interest rates.

Areas of responsibility of the treasury function

- Dealing with stock exchange
- Dealing debt management
- Dealing with investments
- Cash management
- Liquidity management
- Currency management
- Hedging

The treasury department can operate as:

- Cost centre
- Profit centre
- Centralised
- Decentralised

Chapter

8

Business Valuations

Key summary of chapter “business valuations”

There are a number of reasons for valuation of a business as a whole or a parcel of its shares.

- Takeovers & mergers
- Buying and selling shares
- Joining the stock market
- Retirement
- Exit route

There are mainly four ways to value a business

- **Asset based valuation.** The worth is the business's net assets
- **Earnings based valuation.** Uses the PE ratio.
- **Dividends based.** Uses the dividend valuation model
- **Discounted cash flows.** Uses future cash flows discounted by appropriate discount rate

Other methods of valuation

- Shareholder value analysis (SVA)
- Economic value added (EVA)
- M&M theory on changing capital structure

Intellectual capital consist of:

- Human resources
- Intellectual assets
- Intellectual property

There are 3 main methods of valuing intellectual capital

- **Market to book values**
- **Calculated intangible value**
- **Tobin's q**

Chapter

9

Corporate Reorganisations

Key summary of chapter “corporate re-organisations”

Mergers and takeovers

The reason for mergers and takeovers is for integration and four types can be identified. The target company is the company being acquired and the predator company is the company doing the acquiring. Integration leads to a more effective running of the business and thereby saving costs and increasing profits.

Types of integration

- Horizontal
- Backwards vertical
- Forward vertical
- Conglomerate or lateral integration

Reasons for mergers and acquisitions

- Economies of scale
- Increased market share
- Improved efficiency
- Reducing the competition
- Tax relief
- Liquidity
- Asset stripping
- Diversification

Factors to consider in a takeover / merger

- Cost of acquisition
- Reaction of predator's shareholders
- Reaction of target's shareholders
- Form of purchase consideration
- Accounting implications
- Future plans

Rejection of bid by target company

- Unwillingness to sell by the shareholders
- The offer terms are not satisfactory. Initial rejection may lead to a better offer
- The target company can see no real post acquisition benefits
- The employees strongly oppose the offer

Tactics can be employed by the company to protect itself before the bid

- Types of shareholders
- Articles of association stipulations
- Poison pills
- Asset values

Tactics can be employed by the company to protect itself after the bid

- Reject
- Good forecasts
- White knight
- Give bad publicity
- Competition commission
- Management buyout

The predator company's shareholders may not approve the bid for various reasons

- Reduction in EPS
- Risky
- Control
- Gearing

Mergers and acquisitions are regulated by

- Competition commission
- City code
- European commission

Purchase consideration

- Cash purchases
- Share exchange
- Earn out arrangements

If the purchase consideration is share for share exchange, some important calculations include:

Post-merger EPS and post-merger share price

An estimated post merger EPS can be calculated by:

$$\text{Combined earnings) / total shares after merger}$$

An estimated post merger share price can also be calculated depending on the information given:

1 Post merger EPS x parent's PE ratio

This is assuming that the parent (predator) company can maintain its price earning multiple on the combined entity.

2 Post merger NPV / number of shares after the merger

The post-merger share price and the post-merger EPS can be compared against the share price and EPS for each entity before the merger to see if both sets of shareholders will agree to the sale.

Therefore in exam questions, when asked how the merger will affect both sets of shareholders in financial terms, the following must be calculated to gain full credit:

- Post-merger share price
- Post-merger EPS
- Split of post-merger gains

Other financial analysis could also be undertaken (i.e. ratio analysis). It is also important to then discuss the non financial factors (i.e. post merger integration)

Post acquisition integration plan

- Communications
- Respect
- Support and training
- Effective management systems
- Feedback

Failure of mergers and takeovers

- Poor strategic plan
- Poor management and lack of respect for staff.
- Incompatible IT systems.
- Lack of knowledge
- Cultural differences.
- Lack of control and feedback.

Other forms of company re-organisations

- Divestment
- De-merger
- Going private
- Management buy-outs (MBOs)
- Buy-ins
- Venture capitalists

Other options available for growth

- Joint venture
- Strategic alliance
- Franchise (licensing)
- Sales agent
- Manufacturing overseas or exporting
- Turnkey operations

Dealing with general risk

PEST analysis

- Political e.g. political culture, bureaucracy of regulating competition
- Economic e.g. exchange rates, interest rates, taxation or business cycle
- Social e.g. demography, population and culture of country or market
- Technological e.g. existence, threat or opportunities of using it new technology

Chapter
10

Investment Appraisal

Part 1

Key summary of chapter “investment appraisal part 1”

A project or investment requires appraisals to ensure that it will earn a return. The main financial objective of profit making organisations is to maximise shareholder wealth. This will be achieved if the return on a project is greater than the cost of capital. But it is also important to take into consideration the non financial aspect of a new project or investment. The affects on all the stakeholders need to be analysed and not just the financial implications.

Investment appraisal

The following techniques are useful when financially screening new products, projects or divisions.

- Payback period (also discounted payback)
- Accounting rate of return
- Net present value (discounting cash flows DCF)
- Internal rate of return
- Modified internal rate of return (MIRR)

Payback

Payback seeks to work out when a project will pay for its investment out of its earnings. It is usually expressed in number of years and is worked out by dividing the earnings by the original investment.

Payback calculates in cash flow terms how quickly a project will take, to pay itself back. Its major assumption is that cash is received or accrued evenly throughout the year.

Accounting rate of return (ARR)

ARR as it is commonly called is a profit based measure, using the profit and loss account and accounting rules to determine an overall average profit or total profit of a project over the period of its life time and comparing this to the investment amount as a percentage.

$$\text{ARR \%} = \frac{\text{Average profit over the life of the project}}{\text{Average investment}} \times 100$$

[where “average investment” = $(\text{Opening Investment} + \text{Closing Investment})/2$]

Net present value (NPV)

NPV discounts future cash flows for an investment opportunity back to today’s values. NPV recognises that money received later in time is less valuable than money received today. For example £20,000 received today is more valuable than £20,000 received in 5 years time, this is because of the erosion of value through inflation and opportunity cost of lost interest. NPV uses an appropriate discount factor derived from a cost of capital to represent this effect which takes into account of the time value of money.

NPV like payback uses relevant costing when forecasting cash flows. Every pound you tie up in investing in projects has opportunity cost. The money could be invested elsewhere earning a certain % return for the company.

Present value tables (used when future cash flows are lumpy) and cumulative present value tables (used when you have constant cash flows over at least two periods of time) contain discount factors derived from costs of capital which are used to work NPV calculations.

The major assumption of NPV analysis is that cash flows occur at the end of a year, never accruing evenly over it (which is the assumption of the payback method).

Investment decision → positive NPV accept, negative NPV reject

Internal rate of return (IRR)

The cost of capital that if used would give a project a zero NPV, also understood as the true return of a project.

The decision criteria would be to accept all projects that give an IRR of more than or equal to the cost of capital for the company.

Investment decisions

IRR - if the IRR on the project is greater than the borrowing rate → accept

Modified IRR (MIRR)

To combat the problem of the reinvestment assumption in IRR, another way has been developed called the modified internal rate of return (MIRR). The method has the following features:

- (i) It eliminates multiple IRRs
- (ii) It focuses on a more realistic reinvestment assumption thereby reducing overestimates of the project.
- (iii) Ranking of the projects is a lot easier and more consistent with the NPV method.

Certainty equivalents

Another way of dealing with risk of future cash flows in investment appraisal is the certainty equivalent approach. With this method future cash flows are converted to their certainty equivalent amounts thereby removing all the risk involved them. For cash inflows this will be reduced, for cash outflows they will be increased.

The discount factor used to discount them is the risk free rate. This is because the risk has been removed from the cash flows.

Capital rationing

Capital rationing is when a company does not have sufficient funds to undertake all of the investment projects it would like to and so has set a budget for projects or increases the cost of capital.

This is either due to internal reasons such as head office imposing authorised capital expenditure limits (**soft / internal capital rationing**).

Or due to external reasons such as excessive gearing levels currently exist therefore it would be unlikely the company can raise the level of funding required (**hard/external capital rationing**).

Rank projects according to their profitability index

Profitability index – NPV / investment

Equivalent annual cost (EAC) or annualised equivalent method

The annual equivalent method is used to enable a comparison to be made between projects when the time period of comparison for each is different.

AEM = NPV / annuity (given a cost of capital) for the life of the project

AEM = the annual cash flow amount that would return the NPV given, for the period of the projects life.

Capital budgeting procedure

Forecasts - needed to plan to have sufficient funds available for future capital requirements

Capital expenditure committee - review capital expenditure budgets, appraise and authorise capital expenditure and review actual expenditure against budgets

Authorisation procedures - capital expenditure limits to be set and detail required by committee to be stipulated

Post-audit procedures should be undertaken on completion of a project to assess its ultimate success compared with its original objectives

Real options are inherent in capital projects. When a proposed capital project is being appraised, there will be several options inherent in the project:

Expansion – a call option

Abandonment – a put option

Deferment – a call option

Linking investments with customer requirements and produce / service design

The aim of the project should not only be to maximise shareholder wealth but also to achieve greater customer satisfaction. The project must achieve greater value for the customers and this must be incorporated in the initial investment cycle.

Investments in IS / IT

Computers and information systems are core to the success of all business these days. Costs can be very high and therefore careful investment appraisal is required just like with any other investment.



Chapter
11

Investment Appraisal

Part 2

Key summary of chapter “investment appraisal part 2”

With APV, cash flows are broken down and different discount rates are used to give a more accurate appraisal. The APV method calculates the basic NPV of the project on the assumption that the company is all **equity financed**. This “**base case**” NPV is then adjusted for the financing side affects.

APV uses the theory of CAPM to allow for different risks with gearing and un-gearing β .

Step 1 - Calculate the base case NPV assuming that the project is financed entirely by equity.

Step 2 - Calculate the financial effect of the actual method of financing.

Step 3 - Add the values from steps 1 and 2 to give the APV

If the APV is positive, accept the project. If negative, reject the project.

Overseas investment appraisal

There are two ways an overseas investment can be appraised using NPV:

- 1 Discount the foreign currency cash flows with a **foreign adjusted discount** rate to give a **foreign currency NPV**. Translate the foreign currency NPV to home currency NPV using the **spot exchange rate**.
- 2 Translate the foreign currency cash flows to home currency using **forecast exchange rates** and then discount these translated cash flows using home discount rate.

Both methods should give the same answer.

Exchange rate determination

The difference between a forward exchange rate and the spot rate is attributable to differences in interest rates between the two currencies, and inflation rates between the two countries.

$$\text{Interest rate parity} \quad \text{Spot rate A/B} \times \frac{1 + \text{country A interest rate}}{1 + \text{country B interest rate}} = \text{Forward rate}$$

$$\text{Purchasing power parity} \quad \text{Spot A/B} \times \frac{1 + \text{A inflation rate}}{1 + \text{B inflation rate}} = \text{Forward rate}$$

Apart from the normal PEST analysis, particular considerations for overseas investment include:

- Exchange rate risk
- Financing
- Remittances
- Taxation affects
- Cost of capital
- Non financial considerations

Examples of political risk within countries

- Outbreak of national **war**, civil war, unrest or riot.
- **Nationalisation of industries** e.g. confiscation of assets from private sector by a nations government to become state owned and controlled.
- **Enforcement of international trade barriers** e.g. imports and export tariffs and quotas, or exchange controls over a nation's domestic currency to influence its exchange value.
- **Changes in taxation policy and regulations** e.g. the UK governments windfall tax based on "the excess profits of privatised utilities".
- **Restrictions on dividends or expropriation of assets** out of a country.
- **Political instability** e.g. elections may change policy.
- **New regulation or legislation** introduced e.g. changing laws about foreign ownership, competition and employment.
- **Conflict of interest** between a governments aims and the organisations aims.

Foreign exchange risk

Foreign exchange risk or currency risk is the risk of uncertainty of outcome that arises because exchange rates change. Organisations are more global and transactions occur in currency which is different to their own home currency. Foreign exchange risk works both ways, the movement in exchange rates can be either favourable or adverse