

Qualification Programme

Module B: Corporate Financing



FOURTH EDITION



Hong Kong Institute of
Certified Public Accountants
香港會計師公會



Hong Kong's
CPA Qualification
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Flashcards

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Welcome to the HKICPA Flashcards for Module B Corporate Financing

- They concentrate on the key topics you need for your exam preparation
- They include **diagrams** to assist your memory.
- They follow the overall **structure** of HKICPA Learning Packs, but these Flashcards are not just a summarised book. Each card has been separately designed for clear presentation. Topics are self contained and can be grasped visually.
- The Flashcards are **just the right size** for pockets, briefcases and bags.

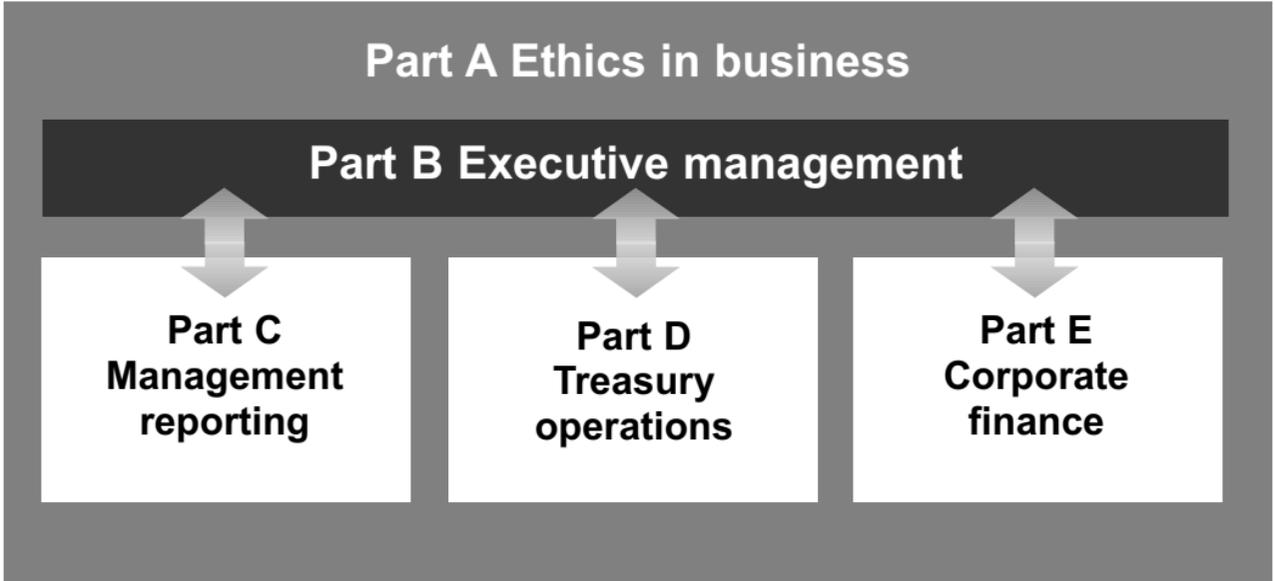
Run through the **Flashcards** as often as you can during your final revision period. The day before the exam, try to go through the **Flashcards** again! You will then be well on your way to passing your exams.

Good luck!

Overall structure of Module B

Part A Ethics in business

Part B Executive management



Part C
Management
reporting

Part D
Treasury
operations

Part E
Corporate
finance

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1: Ethics in business

Topic List

Ethics in business

Professional and industry guidance

Solving ethical dilemmas

Corporate social responsibility and sustainable development

Business ethics is an increasingly important area. Ethical ideas have a strategic impact upon organisations, and with them come notions of corporate social responsibility and principles of good corporate governance. The influence of culture upon an organisation and its people must not be underestimated.

Ethics are ideas about right and wrong that set standards for conduct. Ethics are important to business because society considers such things important. There are also rules of professional conduct to consider. Ideas of right and wrong have become more fluid and less absolute. As a result there is a greater scrutiny of organisations' behaviour since it is likely to be less subject to definitive internal rules.

Scope of corporate ethics

Corporate ethics may be considered in three contexts:

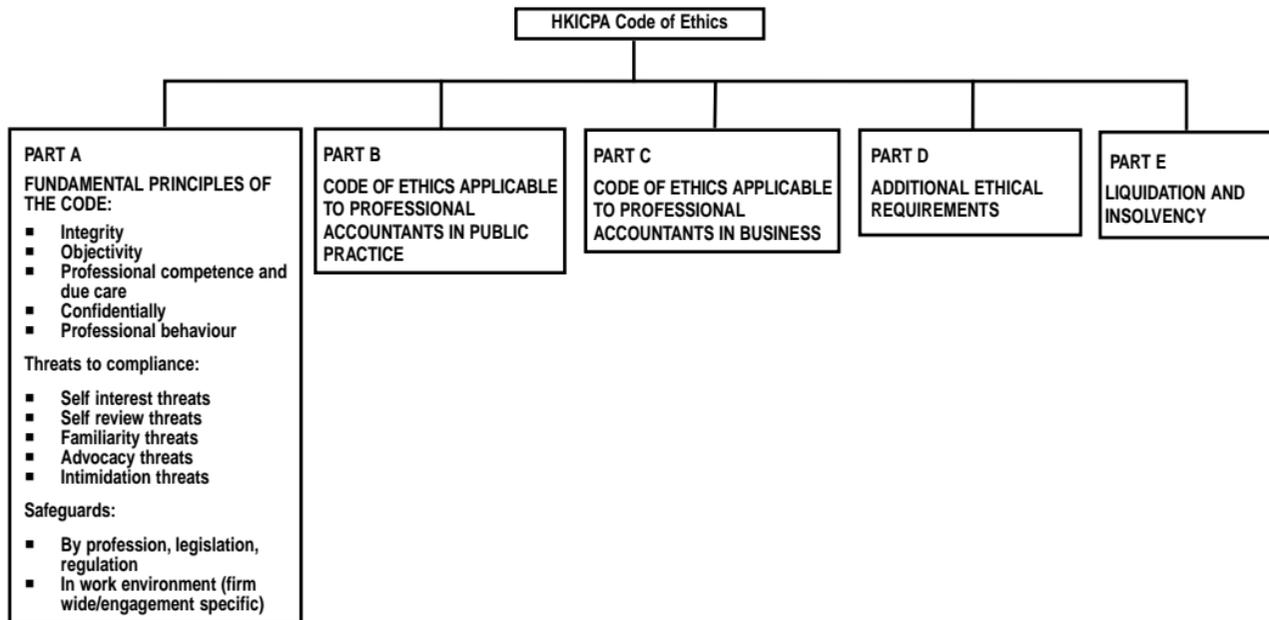
- 1 The organisation's interaction with **national** and **international** society
- 2 The effects of the organisation's **routine operations**
- 3 The behaviour of **individual members** of staff

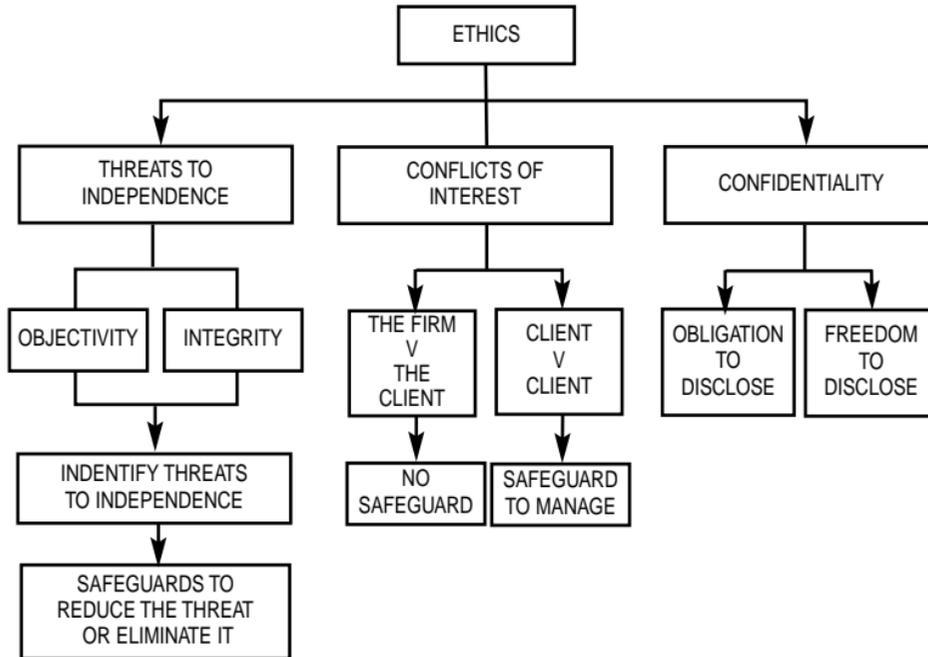
Organisations often publish corporate ethical codes to disseminate their policies on ethics.

Ethical dilemmas

Conflicting views of the organisation's responsibilities create ethical dilemmas for managers at all levels.

- Dealing with corrupt or unpleasant regimes
- Honesty in advertising
- Employees – cost or asset?
- Corrupt payments to officials – extortion, bribery or gift? The local culture must be considered.



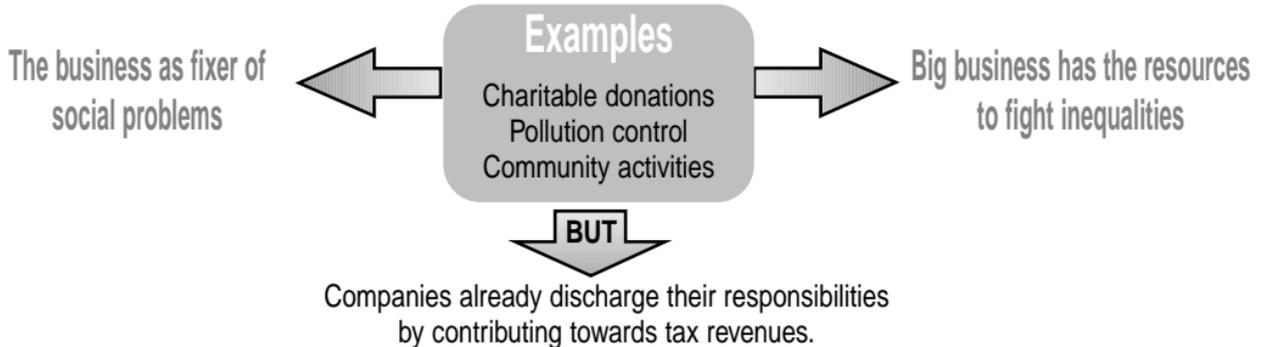


Solving ethical dilemmas

American Accounting Association seven-step model

- 1 Determine the facts
- 2 Define the ethical issue
- 3 Identify the major principles, rules and values
- 4 Specify the alternatives
- 5 Compare values and alternatives – see if the decision is clear
- 6 Assess the consequences
- 7 Make your decision

Should businesses actively practise social responsibility?



Ethical stance

- Meet minimum legal obligations
- Manage relationships with wider stakeholders
- Adopt corporate social responsibility

Benefits of CSR

- Attract ethical customers & investors
- Staff loyalty/morale
- Reputation
- Reduce costs if energy efficient, water efficient
- New product opportunities

Sustainable development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs

Global initiatives

- GRI (Global Reporting Initiative) guidelines for sustainability reporting
- SRI (Socially Responsible Investment) indices
- Hang Seng Corporate Sustainability Index Series

Hong Kong

- Council for Sustainable Development
- Main board Listing Rule: companies are encouraged to produce an Environmental, Social and Governance (ESG) report annually (in the annual report or as a separate document). ESG Reporting guide sets out general disclosure and key performance indicators for:
 - Workplace quality
 - Environmental protection
 - Operating practices
 - Community involvement

Notes

2: Strategy formulation and choice

Topic List

What is strategy?

Mission, goals and objectives

Elements of strategic management

Environmental analysis

Corporate appraisal

Strategic choice

Strategy implementation

This chapter gives you an overview of the fundamentals of strategy and strategy formulation, and how they relate to business analysis.

What is strategy?

Mission, goals & objectives

Elements of strategic management

Environmental analysis

Corporate appraisal

Strategy: the direction and scope of an organisation over the long term, which achieves advantage in a changing environment through its configuration of resources and competencies with the aim of fulfilling stakeholder expectations.

Areas for decision making

- Long-term direction
- Scope of activities
- Competitive advantage
- Adapting activities to fit business environment
- Exploiting resources/competencies
- Expectations of key stakeholders

Strategic decisions

- Complex
- Subject to uncertainty
- Impact on operational decisions
- Affect whole organisation
- Lead to change

Steps in formulating strategies



What is strategy?

Mission, goals & objectives

Elements of strategic management

Environmental analysis

Corporate appraisal

The mission of an organisation describes its basic function, in terms of the products it makes or services it provides. Goals are derived from an organisation's mission. Operational goals can be expressed as SMART objectives (Specific, Measurable, Attainable, Result-orientated, Time-bound)

Example

A **mission** might be to manufacture affordable cars, a **goal** to enhance car manufacturing quality and an **objective** to reduce the number of defects to one part per million over the next year.

Corporate objectives

These concern the organisation as a whole (e.g. profitability, industrial relations) and are set as part of the corporate planning process.



Strategic objectives

(primary objectives)

These combine to ensure the achievement of the primary corporate objective.



Subsidiary objectives

(secondary objectives)

These are developed beneath strategic objectives.

To ensure co-ordination, the various functional objectives must be interlocked vertically, horizontally and over time.

Example

If a primary objective is growth in profits, strategies by which the primary objective can be achieved (e.g. for growth in sales) must be developed.

Hierarchy of objectives

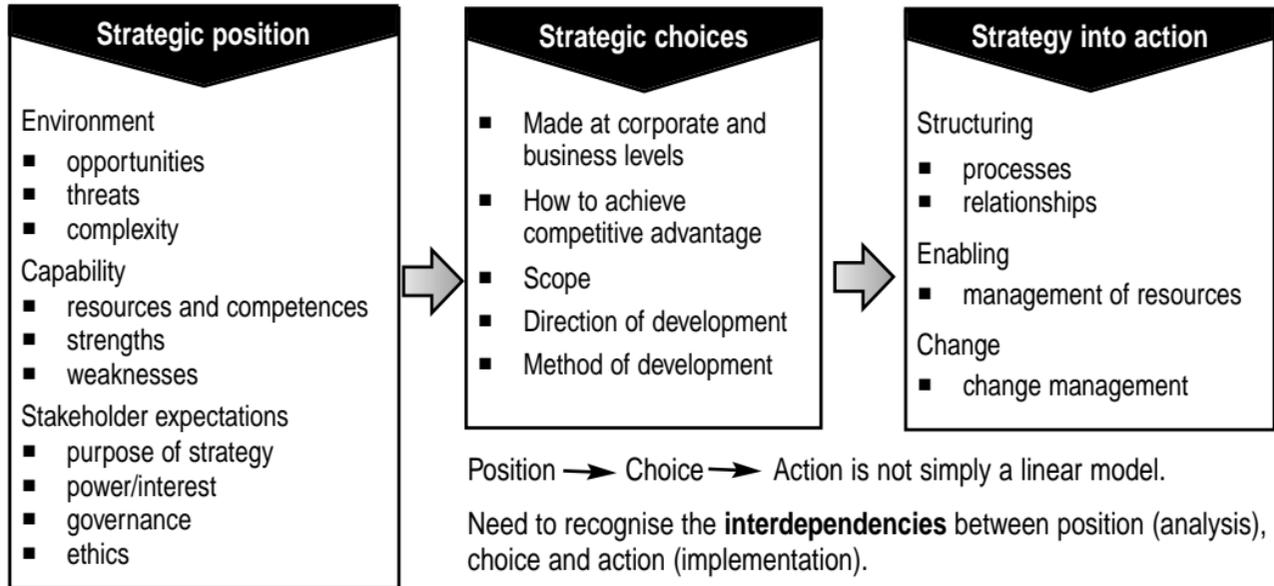


Each level of the hierarchy derives its objectives from the level above, so ultimately all objectives are found in the mission. Objectives therefore cascade down the hierarchy so that, for example, strategies are set to achieve objectives, and provide targets for tactics.

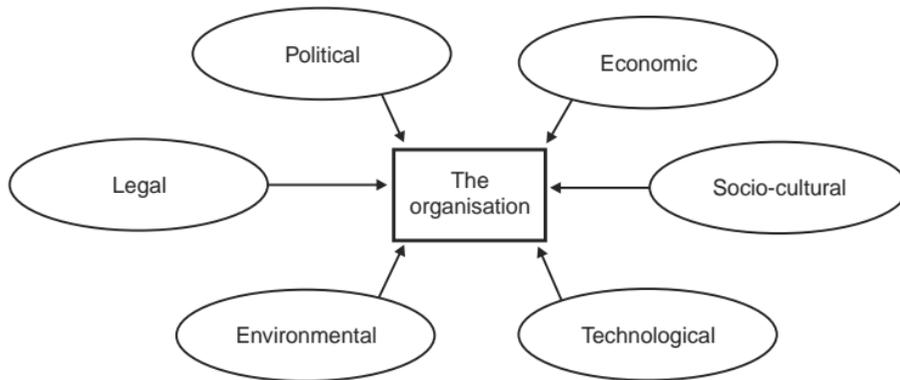
Stakeholders

- **Internal** stakeholders (employees, management)
- **Connected** stakeholders (shareholders, customers, suppliers, financiers)
- **External** stakeholders (the community, government, pressure groups)

Johnson, Scholes and Whittington's model of strategy



PESTEL analysis: analysis of external environment



The **PESTEL** framework is based upon six segments: **political**, **economic**, **socio-cultural**, **technological**, **environmental** and **legal**.

Political/legal factors

Governments oversee framework in which business operates e.g. physical, social and market infrastructure.

Many aspects of business activity are subject to legal regulation:

- Contracts
- Health and safety
- Employment
- Tax

Environmental protection

Need to:

- protect sources of materials
- reduce costs of transport/logistics
- innovate: growing demand for 'green' products and technology

Economic factors

These operate in both a national and international context. Relevant factors include:

- Inflation rates
- Employment rates
- Interest rates
- Tax levels
- The business cycle
- Growth/fall of GDPs
- Savings levels
- Exchange rates
- International trade
- Capital markets

Need to respond to:

- government regulation to protect the environment
- risk of natural disaster (earthquake, tsunami)

Socio-cultural factors

Demography is the study of human population and population trends (e.g. birth rate, average age, ethnicity, death rate, family structure, social structure and wealth).

Demographic changes have clear implications for patterns of demand. They also affect availability of labour. Can also affect recruitment policies.

Culture in society provides a framework for understanding beliefs and values, and creates patterns of human activity. It influences **tastes** and **lifestyles**.

Affects:

- Marketing - may need to adapt products/services for a particular market.
- HR - cultural differences in recruitment.

Business must be particularly aware of **cultural change**.

Technological factors

Many strategies are based on exploiting technological change (e.g. Internet and e-commerce). Others are defences against such change (e.g. emphasising service or quality when a competitor introduces a major technical development).

Technological developments affect all aspects of business (especially IT developments)

- New products and services become available
- New methods of production and service provision
- New ways of selling (e.g. e-commerce)
- Improved handling of information in sales and finance
- New organisation structures to exploit technology
- New media for communication with customers and within the business (e.g. Internet and email) to facilitate business globally.

Porter's Five Forces Model

Forces that determine long-term profit potential of an industry



Factors that affect the strength of the five forces

Bargaining power of suppliers

Depends on:

- Number of suppliers
- Threats to suppliers' industry
- Number of customers in the industry
- Scope for substitution
- Switching costs
- Selling skills

Suppliers seek **higher prices**

Bargaining power of customers

Depends on:

- Volume bought
- Scope for substitution
- Switching costs
- Purchasing skills
- Importance of quality

Customers seek **lower prices**

Threat of new entrants

This is limited by **barriers to entry**

- Scale economies
- Switching costs
- Patent rights
- Product differentiation
- Access to distribution
- Access to resources

Rivalry among current competitors

Depends on:

- Market growth
- Spare capacity
- Uncertainty about competitor's strategy
- Buyers' ease of switching
- Exit barriers

Substitutes

Existence of close substitutes

Strategic capability: the adequacy and suitability of an organisation's **resources** and **competences** to achieve its strategy.

9 Ms Model (review of organisation's resources)

- Machinery
- Markets
- Management information
- Makeup
- Materials
- Money
- Management
- Methods
- Men and women

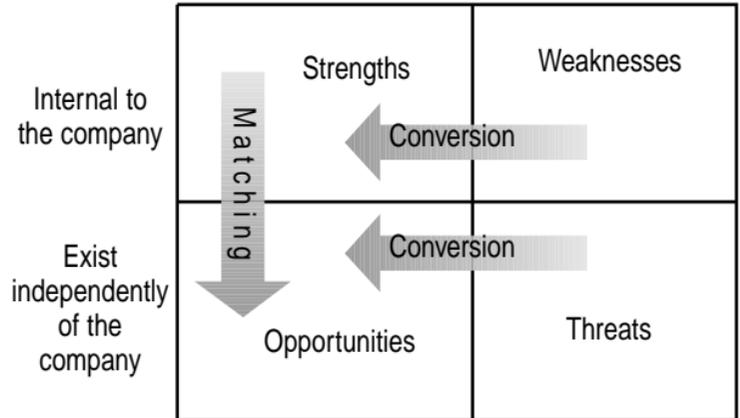
Critical success factors – "those product features particularly valued by a group of customers and therefore where the organisation must excel to outperform the competition" (JSW)

SWOT analysis

A critical appraisal of the **strengths** and **weaknesses, opportunities** and **threats** in relation to the internal and external environmental factors affecting an organisation, in order to establish its condition prior to the preparation of a long-term plan.

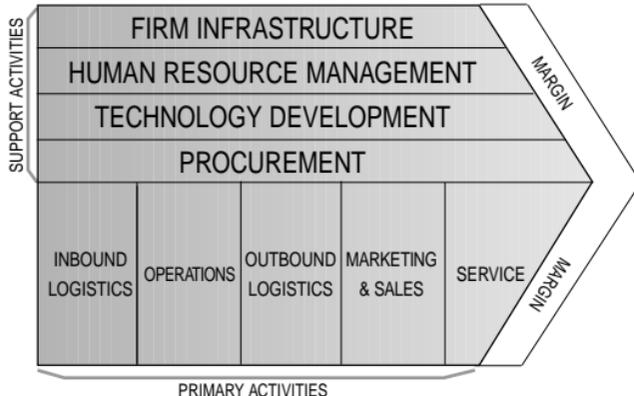
A strengths and weaknesses analysis establishes strengths that should be exploited and weaknesses that should be improved. The opportunities and threats might arise from general environment factors and/or from competitive factors. Techniques used include PESTEL and Porter's five forces.

How SWOT can guide strategy formulation



- 1 Match strengths with market opportunities
- 2 Convert weaknesses into strengths and threats into opportunities

Porter grouped the various activities of an organisation into a **value chain**.

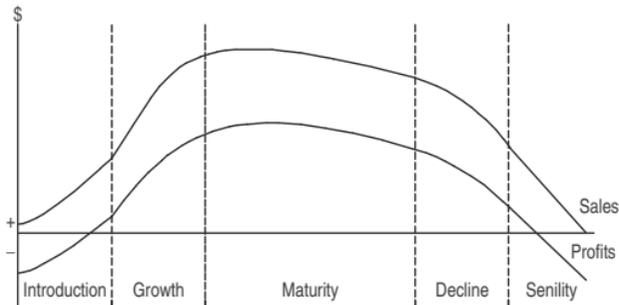


The **margin** is the excess the **customer** is prepared to **pay** over the **cost** to the firm of obtaining resource inputs and providing value activities. It represents the **value created** by the **value activities** themselves and by the **management of the linkages** between them. **Linkages** connect the activities in the value chain. The activities affect one another and therefore must be coordinated.

Using the value chain. A firm can secure competitive advantage in several ways.

- Invent new or better ways to do activities
- Combine activities in new or better ways
- Manage the linkages in its own value chain
- Manage the linkages in the value network

Product life cycle



Introduction: development; marketing and production costs high; sales volume low; profits low

Growth: sales volume accelerates; unit costs fall; profits rise; competitors enter the market

Maturity: longest period; profits good; reminder promotion

Decline: many causes; sales fall; over capacity in industry; some players leave market

Senility: profit negligible; product may be retained in niche

What is strategy?

Mission, goals & objectives

Elements of strategic management

Environmental analysis

Corporate appraisal

Portfolio analysis is applicable to products and market segments. There are four basic strategies:

Build

Invest for market share growth

Hold

Maintain current position

Harvest

Manage for profit in the short term

Divest

Release resources for use elsewhere

The BCG matrix

		Relative market share	
		High	Low
Market growth	High	Stars	Question marks
	Low	Cash cows	Dogs

Stars – Build

Cash cows – Hold or Harvest

Question marks – Build or Harvest

Dogs – Divest or Hold

Sixth force = Complementors or Government/public interest

Ansoff described the four possible growth vectors in the four cells in the diagram below: the **growth vector matrix**.

		PRODUCT	
		Existing	New
MARKET	Existing	<p>Market penetration</p> <ul style="list-style-type: none"> ■ Maintain or increase market share ■ Dominate growth markets ■ Drive out competition from mature markets ■ Increase usage by existing customers 	<p>Product development</p> <ul style="list-style-type: none"> ■ Launch new products (using existing knowledge of customers) ■ May require new competences ■ Forces competitors to follow suit ■ Discourages newcomers ■ May require investment in R&D or new production facilities
	New	<p>Market development</p> <ul style="list-style-type: none"> ■ New markets for current products ■ New geographic areas – export ■ New package sizes ■ New distribution channels ■ Differential pricing to suit new segments 	<p>Diversification</p> <pre> graph TD D[Diversification] --- R[Related] D --- U[Unrelated (conglomerate)] R --- V[Vertical] R --- H[Horizontal] V --- F[Forward] V --- B[Backward] </pre> <p>New competences will be required</p>

PORTER'S GENERIC STRATEGIES – to achieve competitive advantage**Cost leadership**

Aims to be the lowest cost producer in the industry as a whole

Aspects of cost leadership

- Economies of scale
- Use the latest production technology or cheap labour
- Productivity improvement
- Minimisation of overheads
- Favourable access to inputs

Differentiation

Aims to exploit a product perceived as unique within the industry as a whole

Aspects of differentiation

- **Breakthrough** products – radical performance advantage
- **Improved** products – superior performance at a competitive price
- **Competitive** products – unique combinations of features
 - Brand image
 - Special features
 - Unique combination of **value activities**

Focus

Activity is restricted to a particular **segment** of the market. Either a cost leadership or differentiation strategy is then pursued. Such concentrated effort can be more effective, but the segment may be attacked by a larger firm.

Generic strategies and the five competitive forces

Competitive force	<i>Advantages</i>		<i>Disadvantages</i>	
	<i>Cost leadership</i>	<i>Differentiation</i>	<i>Cost leadership</i>	<i>Differentiation</i>
New entrants	Economies of scale raise barriers to entry	Brand loyalty and perceived uniqueness are entry barriers		
Substitutes	Firm is not as vulnerable as its less cost-effective competitors to the threat of substitutes	Customer loyalty is a weapon against substitutes		
Customers	Customers cannot drive down prices further than the next most efficient competitor	Customers have no comparable alternative Brand loyalty should lower price sensitivity		Customers may no longer need the differentiating factor Sooner or later, customers become price sensitive
Suppliers	Flexibility to deal with cost increases	Higher margins can offset vulnerability to supplier price rises	Increase in input costs can reduce price advantages	
Industry rivalry	Firm remains profitable when rivals go under through excessive price competition	Unique features reduce direct competition	Technological change will require capital investment, or make production cheaper for competitors Competitors learn via imitation Cost concerns ignore product design or marketing issues	Imitation narrows differentiation

JS&W (*Exploring Corporate Strategy*) checklist for assessing strategic options:

- Suitability
- Acceptability
- Feasibility

(a) **Suitability** – Does the strategy fit the company's operational circumstances and strategic position?

This involves assessing the strategy in relation to issues identified in the SWOT analysis, its external environment, its mission and objectives, and its competencies.

(b) **Acceptability** – Does the strategy meet the stakeholders' expectations?

This includes consideration of the risks and returns for the company's shareholders but also the wider stakeholders. It also involves issues such as ethics and corporate responsibility.

(c) **Feasibility** – Does the organisation have the time and resources to implement the strategy?

Key issues here are whether the company can access sufficient finance and resources quickly to implement the strategy and whether it can deliver results within an appropriate timeframe.

Implementation – the conversion of the strategy into detailed plans or objectives for operating units/functions

- Resource planning
- Operations planning
- Organisation structure

Business plan – goals, strategies, resources

Prepare detailed **budgets** – the plan for a defined period

Notes

3: Financial analysis and strategy

Topic List

Financial management decisions

Objectives

Evaluating financial strategy

Business plan

Financial plan

Forecasting

This chapter considers the important issues to be evaluated when assessing alternative financial strategies for an organisation.

Investment decisions

Investment decisions include:

- New projects
- Takeovers
- Mergers
- Sell-off/divestment

The financial manager must:

- Identify decisions
- Evaluate them
- Decide optimal funding

Financing decisions

Financing decisions include:

- Long-term capital structure
Need to determine source, cost and risk of long-term finance.
- Short-term working capital management

Balance between profitability and liquidity is crucial.

Dividend decisions

Dividend decisions may affect views of the company's long-term prospects, and thus the shares' market values.

Payment of dividends limits the amount of retained earnings available for re-investment.

Consider interaction of decisions, e.g. paying out **dividends** leaves less funds available to **finance investments**.

Principal objectives of financial management

- Profitability – in order to provide shareholders with required rate of return
- Liquidity – to have sufficient cash to meet financial commitments when they become due

Financial objectives

The main objective is maximisation of profits to maximise shareholder wealth and company valuation. Other financial targets might include:

- Level of gearing
- Profit retention
- Operating profitability
- Cash generation
- Value added

There may be conflicts between multiple financial objectives, or between short-term and long-term objectives. Companies should also consider how **efficiently** the profits are being generated and what **volume of investment** has been required to earn profits.

Financial management decisions

Objectives

Evaluating financial strategy

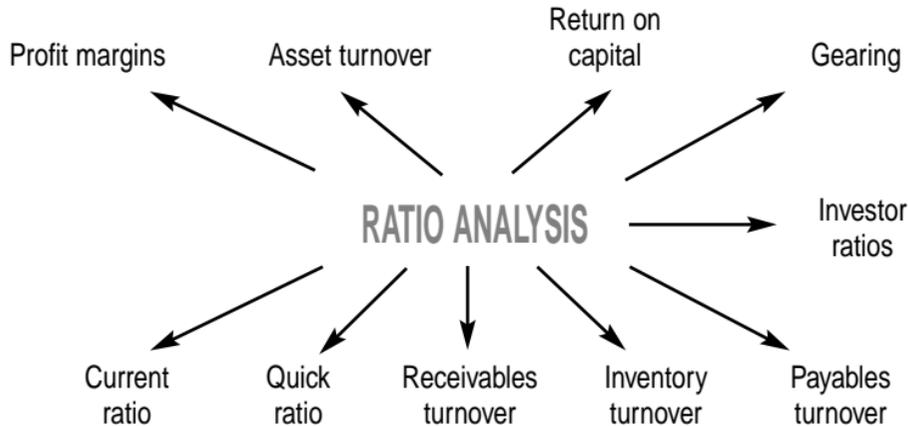
Business plan

Financial plan

Forecasting

- Profitability and return
- Debt and gearing

- Liquidity
- Shareholders' investment



Dividend yield

$$= \frac{\text{Dividend per share}}{\text{Market price per share}} \times 100\%$$

Interest yield

$$= \frac{\text{Gross interest}}{\text{Market value of loan stock}} \times 100\%$$

STOCK MARKET (INVESTOR) RATIOS

Earnings per share

$$= \frac{\text{Profit after tax and preference dividend}}{\text{Number of equity shares in issue}}$$

Dividend cover

$$= \frac{\text{Maximum profit available for equity dividend}}{\text{Actual dividend}}$$

P/E ratio

$$= \frac{\text{Market price of share}}{\text{EPS}}$$

or = $\frac{\text{Total market value of equity}}{\text{Total earnings}}$

Financial
management decisions

Objectives

Evaluating
financial strategy

**Business
plan**

Financial
plan

Forecasting

Business plan: describes the goals, strategies and resources of a business.

The business

- Detailed description of the business
- Marketing plan
- Competitive environment
- Outline of operations and operating procedures
- Personnel and HR
- Business insurance

Financial data

- Latest statement of financial position and income statement
- Pro-forma income statement projections
 - Three year summary
 - Detail by month for the first year
 - Detail by quarters for the second and third years
 - Assumptions on which the projections were based
- Pro forma cash flow statement projections
- Capital expenditure plans
- Details of loans and loan applications

Other supporting documents

- Copies of legal documents, including leases, licences etc
- Career and personal details for all directors and key management personnel
- Income tax returns
- Copies of important contracts, e.g. supply contracts, franchise agreements
- Other documentation as appropriate

Financial plan: summarises the financial consequences of the business plan in profit and cash flow terms

Master budget

- Sales
- Production
- Purchasing
- Marketing
- Administration
- Working capital
- Research & development
- Capital expenditure
- Cash flow planning
- Funding requirements
- Assumptions
- Sensitivity analysis

Taking action

A business with **potential liquidity problems** can sell investments, improve working capital management or borrow. If a need to borrow is known in advance, favourable rates may be obtained. Business that expect to have surplus cash can plan how to invest it to earn interest.

Cash forecasting should ensure that sufficient funds will be available, when needed, to sustain the activities of an enterprise at an acceptable cost.

A **cash budget** or **forecast** is a detailed budget of estimated cash inflows and outflows incorporating both revenue and capital items.

Cash forecasts can help in planning the structure of an organisation's finances

- **How much** cash is required
- **When** it is required
- **How long** it is required for
- Whether it will be available from **anticipated sources**

A business will also need to take account of **economic variables** (such as inflation, interest rates) and **business variables** (such as changes in the competitive environment).

Cash deficits will be funded in different ways, depending on whether they are short or long term. Businesses should have procedures for **investing surpluses** with appropriate levels of risk and return.

Forecast financial statements

Forecast financial statements may be prepared in conjunction with cash flow forecasts to see if the company is likely to meet stated financial objectives.

Assumptions may be made on:

- Sales/cost increases
- Accounting ratios
- Non-current asset purchases
- Dividends
- Working capital levels

Consider also carrying out sensitivity analysis on effect of changes in economic and business variables.

Taking action

Business with **potential liquidity problems** can sell investments, tighten working capital control or borrow. If the need to borrow is known in advance, favourable rates may be obtained. Businesses with **surplus cash** can use forecasts to help them decide how best to invest it. Interest earnings may be significant.

Notes

4: Cost measurement and analysis in service and manufacturing environments

Topic List

Cost concepts & systems

Activity based costing

CVP analysis

Pricing

Quality cost management

Target costing

Life cycle costing

Customer profitability analysis

This chapter focuses on various techniques for cost measurement and analysis.

Cost concepts and costing systems

Measuring the cost of cost units

Cost behaviour
Basis for providing information for budgets and one-off decisions

Traditional absorption costing:

Assumption that overhead costs are driven by production activity. Full cost includes overhead cost.

Marginal costing:

May be used within a cost measurement system. Cost unit only includes variable cost.

Activity Based Costing:

Assumption that overhead costs are driven by factors other than production work e.g. overhead activities

CVP analysis:

Assumption of predictable fixed and variable costs (marginal costing principles)

Relevant costs for 'one-off' decisions

Outline of an ABC system

- 1 Identify an organisation's major activities.
- 2 Identify **cost drivers**.
- 3 Collect the costs associated with each activity into **cost pools**.
- 4 Charge support overheads to products on the basis of their usage of the activity (measured by the number of the activity's cost driver they generate).

Cost drivers

Any factor which causes a change in the cost of an activity

Examples

The cost driver for a cost that varies with production volume in the short term (such as power costs) should be volume related (e.g. labour hours or machine hours).

The cost driver for a cost that is related to the transactions undertaken by the support department where the cost is incurred should be the transaction in the support department (such as the number of production runs for the cost of setting up production runs).

Example

Cost of goods inwards department totalled \$10,000. Cost driver for goods inwards activity is number of deliveries. During 20X0 there were 1,000 deliveries. 200 of these deliveries related to product X. 2,000 units of product X were produced.

Cost per unit of cost driver = $\$10,000/1,000 = \10 per delivery

Cost of activity attributable to product X = $\$10 \times 200 = \$2,000$

Cost of activity per unit of product X = $\$2,000/2,000 = \1

Types of overhead activity

Overheads associated with ...	such as ...	are driven by ...
Unit related activities	cost of lubricating oil	units produced/hours worked
Batch related activities	two models of car on one production line	number of products being made with the same facilities
Product sustaining activities	type approval of vehicles	the number of different products
Facility sustaining activities	factory insurance	the organisation being in business

Merits

- ✓ ABC produces more accurate cost information.
- ✓ Management should have a greater understanding of why costs are incurred and so should be able to control the level of costs by controlling the level of cost drivers.

Limitations

- ✗ ABC is more complex than absorption costing and so should only be introduced if it provides additional management information.
- ✗ Cost drivers might be difficult to identify.
- ✗ Can one cost driver explain the behaviour of all items in a cost pool?
- ✗ Some measure of arbitrary cost apportionment is still needed for costs such as rent and property taxes.

Factors to consider on the introduction of ABC

- Number of products (at least two otherwise it is pointless introducing ABC)
- Level of support department overheads
- Ease of collecting information
- Resistance to change

Time driven ABC – adopts a departmental approach which is easier and faster

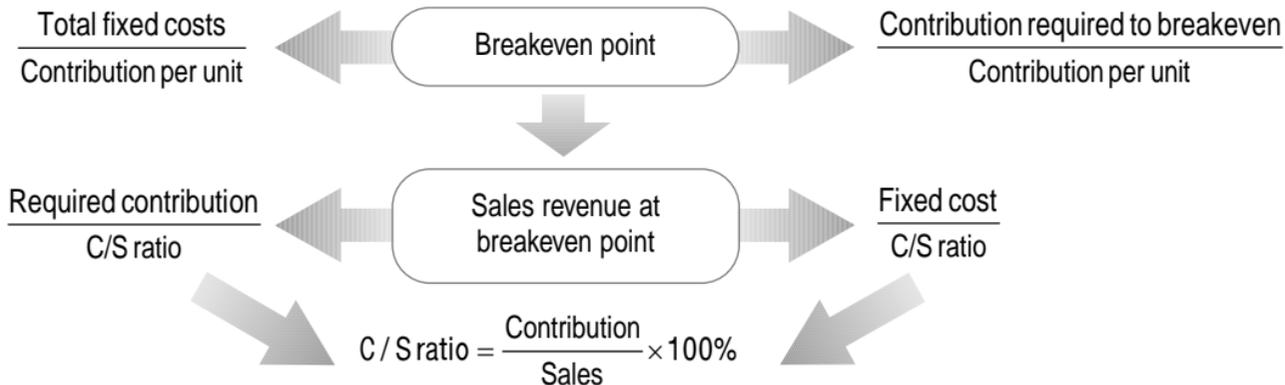
Contribution per unit

is unit selling price – unit variable costs

Profit

is (sales volume × contribution per unit) – fixed costs

Breakeven point is activity level at which there is neither profit nor loss.



Selling price decisions
and CVP analysis



If the selling price
changes, sales volume
will also change



Assess the effect
of the price change
on total contribution

Example

Current annual sales	\$4,000,000
Contribution/Sales ratio	40%
Current annual contribution	\$1,600,000

If the sales price is increased by 25%, sales volume will fall by 15%.

Effect:

	Current	After price increase
Sale price	100	125
Variable cost	60	60
Contribution	<u>40</u>	<u>65</u>
C/S ratio	40%	65/125
New annual sales (x85%)		\$3,400,000
Contribution/Sales ratio		65/125
New total contribution		\$1,768,000
Increase in contribution		\$168,000

Factors influencing price:

- 1 Cost
- 2 Demand
- 3 Price sensitivity
 - Varies amongst purchasers. If cost can be passed on – not price sensitive
- 4 Price perception
 - How customers react to prices. If product price \uparrow , buy more before further rises
- 5 Compatibility with other products
 - e.g. operating systems on computers. User wants wide range of software available
- 6 Competitors
 - Prices may move in unison (e.g. petrol). Alternatively, price changes may start price war

In practice, cost is one of the most important influences on price

Full cost-plus

Marginal cost-plus

Full cost-plus pricing

is a method of determining the sales price by calculating the full cost of the product and adding a percentage mark-up for profit.

Example

Variable cost of production (product A)
= \$4 per unit

Fixed cost of production (product A)
= \$3 per unit

Price is to be 40% higher than full cost

Full cost per unit = $\$(4 + 3) = \7

Price = $\$7 \times \frac{140\%}{100}$
= \$9.80

Advantages

- Quick, simple, cheap method
- Ensures company covers fixed costs

Disadvantages

- Doesn't recognise profit-maximising combination of price and demand
- Budgeted output needs to be established
- Suitable basis for overhead absorption needed

Marginal cost-plus pricing

is a method of determining the sales price by adding a profit margin onto either marginal cost of production or marginal cost of sales.

Example

Direct materials (product B) = \$15

Direct labour (product B) = \$3

Variable overhead (product B) = \$7

Price is to be 60% higher than marginal cost

Marginal cost per unit = $$(15 + 3 + 7) = \25

Price of product B = $\$25 \times \frac{160\%}{100} = \40

Advantages

- Simple and easy method
- Mark-up percentage can be varied
- Draws management attention to contribution

Disadvantages

- Does not ensure that attention is paid to demand conditions, competitors' prices and profit maximisation
- Ignores fixed overheads – so must make sure sales price is high enough to make profit

Minimum price

Minimum price for an item – the price that will cover additional relevant costs of the item, without adding to profit.

Relevant cost of materials

If the materials must be purchased	Purchase cost
If the materials are in inventory, but in regular use	Replacement cost of materials used
If materials are in inventory but have no other use	Disposal value, if any
If materials are in inventory, not in regular use but have an alternative use	Opportunity cost: net cash flow that could be obtained from alternative use

Relevant cost

Relevant costs = incremental future cash flows (and any loss of net cash income) arising as a direct consequence of an item or action.

Relevant cost of labour

If labour must be paid extra for additional hours of work	Additional cash payment
If labour has spare time and is paid a fixed salary/fixed wage	\$0
If labour is in short supply, and employees must be switched from other work	Opportunity cost: net cash flow that could be obtained from other work

Other expense items

Absorbed overhead	Irrelevant: not a cash flow
Only additional cash expenditures are relevant	

Cost of quality

The difference between the actual cost of producing, selling and supporting products/ services and the equivalent cost if there were no failures during production/usage

Cost of prevention

Costs incurred prior to or during production in order to prevent substandard or defective products/services from being produced

Cost of appraisal

Costs incurred in order to ensure that outputs produced meet required quality standards

Cost of internal failure

Costs arising from inadequate quality which are identified before the transfer of ownership from supplier to purchaser

Cost of external failure

Costs arising from inadequate quality discovered after the transfer of ownership from supplier to purchaser

Examples

Quality engineering
Staff training
Design testing

Inspection costs
Testing costs

Cost of scrapped and re-worked items; waste

Cost of handling complaints; sales returns; replacements; warranty costs; lost sales

Traditional approach to product costing

- 1 Develop a product
- 2 Determine the expected standard production cost
- 3 Set a selling price (probably based on cost)
- 4 Resulting profit

Costs are controlled through variance analysis at monthly intervals.

Target costing approach

VERSUS

Competitive market price

– Desired profit margin

= Target cost

A product concept is developed and the price customers would be willing to pay for the concept is determined.

The product must be capable of being produced for this amount (maybe in the long term), otherwise it will not be manufactured.

During the product's life the target cost will be continuously reviewed and reduced so that the price can fall. Continuous cost reduction techniques must therefore be used.

Target cost

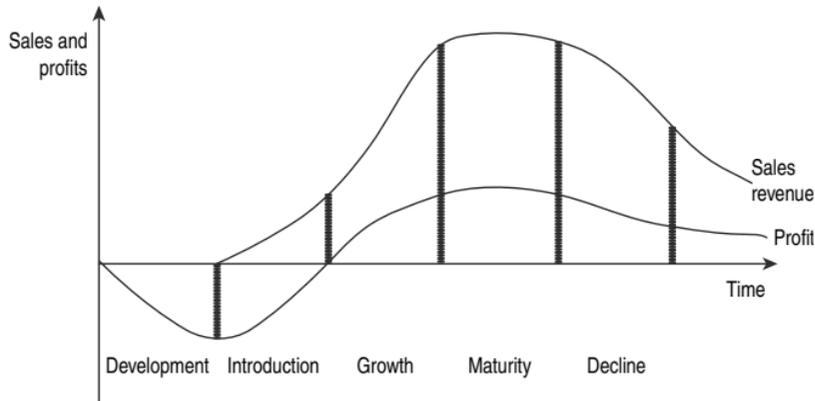
Most cost savings to achieve target cost are made at the product design stage.

If the anticipated product cost (based on the design specifications) is above the target cost, the product design must be modified so that it is cheaper to produce.

Options available to reduce cost

- Develop the product in an atmosphere of continuous improvement.
- Apply **value engineering techniques**.
- Collaborate closely with suppliers.
- Change production methods.
- Improve technologies/processes.
- Cut out non-value added activities.

Life cycle costing tracks and accumulates costs and revenues attributable to each product over the entire product life cycle.



Maximise return over life cycle:

- Design costs out of products
- Minimise the time to market
- Minimise break even time (BET)
- Maximise the length of the life span
- Minimise product proliferation
- Manage the product's cashflows

Customer Profitability Analysis (CPA) considers the total sales revenue from a customer or customer group less all the costs incurred in servicing that customer or customer group.

CPA

Gross sales revenue	\$ X
Less: discounts	(X)
Net sales revenue	<u>X</u>
Cost of goods/services sold	(X)
Gross margin	<u>X</u>
Less: customer specific costs (marketing, admin, selling, telephone etc)	(X)
Net customer margin	<u><u>X</u></u>

Benefits

- Improved profitability
- Better resource allocation
- Enhanced customer service
- Ability to rationalise approach to customers
- Highlight unprofitable customers
- Achieve corporate objectives
- Better negotiation with customers
- Retention of customers
- More informed comparative analysis between customers

5: Performance measurement systems

Topic List

Strategic control and performance measurement

Measuring performance

Financial measures

Non-financial measures

Balanced scorecard

Performance pyramid

This chapter considers alternative approaches to performance measurement.

Strategic control

The key to strategic control is ensuring that the right things get measured.

- **False alarms** motivate managers to improve areas where there are few benefits to the organisation
- **Gaps** are important areas that are neglected (e.g. customer satisfaction)
- **Different measures** apply to different industries

To encourage the measurement of the right things, organisations can institute **formal** or **informal** systems of strategic control. Formal systems require the identification of **milestones of performance (strategic objectives)** and target achievement levels.

Desirable features of strategic performance measures

- Focus on what matters in the long term
- Identify and communicate drivers of success
- Support organisational learning
- Provide a basis for reward
- Measurable
- Meaningful
- Acceptable
- Described by strategy and relevant to it
- Consistently measured
- Re-evaluated regularly

Linking strategy and operations

The achievement of long-term goals will require strategic planning which is linked to short-term operational planning ... If there is no link between strategic planning and operational planning the result is likely to be **unrealistic plans, inconsistent goals, poor communication and inadequate performance measurement.**

Strategic planning and control versus operational planning and control

<u>Strategic</u>	<u>Operational</u>
'Broad brush' targets	Detailed
Whole organisation	Activities of department
External input	Mainly internal information
External focus	Internal focus, on actual procedures
Future orientated, feedforward	More concerned with monitoring current performance against plan
Potential for double loop feedback (i.e. opportunity to change the plan)	Mainly single loop feedback (performance must change, not the plan)

Strategic control and
performance measurement

Measuring
performance

Financial
measures

Non-financial
measures

Balanced
scorecard

Profitability
Liquidity
Gearing/risk

Performance indicators

- Financial
- Non-financial

- Quantitative
- Qualitative

Considerations when selecting/designing measures

- Resources required (costs & benefits of measurement)
- Comparisons e.g. targets/objectives, trends, industry
- Relevance
- Short and long term
- Controllability
- Variety of measures
- Realistic use of estimates, e.g. cost of capital
- Ability of managers to respond

Benchmarking

A systematic and continuous measurement process; a process continually comparing and measuring an organisation's business processes against business leaders to gain information which will help the organisation to take action that will improve its performance

Types of benchmarking

Internal

Comparing one operating unit or function with another in the same organisation

Competitive

Gathering information about direct competitors using, for example, reverse engineering

Functional

Comparing an internal function with the best external practitioners, regardless of industry

Generic

Comparing common business functions that are used in most businesses

Advantages

- Provides basis for establishing standards of performance
- Sets targets that are achievable
- Can be a spur to innovation

Disadvantages

- Implies one best way of doing things
- Yesterday's solution for tomorrow's problem
- Catching-up exercise
- Depends on accurate information about comparator companies

Sales or gross profit margin

$(\text{Gross profit/revenue}) \times 100\%$

Comment

- Measure of the profitability of sales
- Increased by raising prices and/or negotiating lower prices with suppliers
- Focuses on trading and manufacturing activities
- Limitations: affected by the inventory valuation method used and fails to take account of differences in organisations' cost structures; not useful for comparing different industries

Profit margin or operating profit %

$(\text{Operating profit/revenue}) \times 100\%$

Comment

- Key measure of efficiency for profit-making organisations
- Measure of the **efficiency** with which sales (**input**) has been used to generate profit (**value of output**)
- Increased by charging higher prices or reducing costs
- Concerned with profit over which operational management can exercise day to day control (amount left after all direct costs and overheads have been deducted from sales revenue)
- Limitations: affected by different inventory valuation and depreciation policies and fails to show differences in cost structures

Financial gearing

A high level of debt creates financial risk in a company's capital structure.

Financial risk from different points of view

- The company: if debts can't be paid it may be forced into liquidation.
- Suppliers: they are unlikely to recover in full the money they are owed.
- Shareholders: they can expect lower or non-existent dividends if high interest payments are made.

Gearing measures the relationship between shareholders' capital (including reserves), and prior charge capital (or borrowings).

Measures of financial gearing

$$\frac{\text{Prior charge capital}}{\text{Equity capital (incl reserves)}}$$
$$\frac{\text{Prior charge capital}}{\text{Total capital employed}}$$

Operational gearing

Operational gearing is concerned with the relationship between the variable cost/fixed cost operating structure and profitability.

Gearing ratio = contribution/PBIT

Strategic control and performance measurement

Measuring performance

Financial measures

Non-financial measures

Balanced scorecard

Cash flow measures

Reasons for holding cash

Transactions

Precautionary reasons

Speculative reasons

Marginal cash flow (MCF)

= Contribution margin – change in working capital

Operating cash flow (OCF)

= EBIT – change in net operating assets

Net cash flow

= OCF – interest, tax, dividends and changes in equity, provision for tax and provision for dividends

Comparisons

Of the same company over successive accounting periods

They give some indication of progress but there are weaknesses in such a comparison.

The effect of inflation should not be forgotten.

The organisation's progress needs to be put into the context of what other organisations have done and/or special environmental/economic influences.

To improve comparability:

- common size
- index analysis

Between different organisations in the same industry

If they are in the same broad industry but are not direct competitors, expect broadly similar performance in terms of growth.

If they are direct competitors, direct comparisons are possible.

Between organisations in different industries

Investors might want to know:

Growth comparisons

ROCE comparisons

P/E ratio and dividend yield comparisons

Shareholder Value Concept – main objective of a company is to maximise the wealth of its shareholders

Financial performance measures

Limitations

- Only concerned with the data recorded in the accounts
- Accounting policies (depreciation, inventory value) adopted by different organisations can distort performance
- Value of money may change over time due to inflation, making comparison more difficult
- Do not take account of other key, non-financial performance indicators
- Can be manipulated and can give misleading signals
- Focus on the short-term

■ Valid comparisons can be made by bringing a figure 'more up to date' by multiplying by (recent index number/older index number).

Non-financial performance indicators (NFPis)

Examples

Number of customer complaints
Lead times
Non-productive hours
Speed of delivery
Number of people served

Advantages of NFPIs

- Can be provided quickly
- Easy to calculate
- Easier for non-financial managers to understand and use
- Less likely to be manipulated and so should counteract short-termism
- More suitable given recent changes in cost structures and manufacturing and competitive environments

Disadvantages of NFPIs

- Financial aspect cannot be ignored
- Possible information overload
- Pursuit of detailed operational goals may blind managers to overall strategy

NFPIs in relation to employees

Traditional performance measurement systems do not measure skills, morale and training of the workforce.

NFPIs in relation to product/service quality

In a TQM environment, NFPIs should cover three areas.

- Measuring quality of incoming supplies
- Measuring work done as it proceeds
- Measuring customer satisfaction

Quality of service and customer satisfaction can be assessed using customer surveys.

Qualitative issues to consider include the impact on/of human behaviour and ethics.

Strategic control and performance measurement

Measuring performance

Financial measures

Non-financial measures

Balanced scorecard

Key features

- Covers all relevant areas of performance
- Looks internally and externally
- Related to the key elements of an organisation's strategy
- Links financial and non-financial measures
- 'Balanced', thereby preventing improvement in one area at the expense of another

Problems

- Conflicting measures
- Selection of measures
- Lack of familiarity with certain perspectives
- Inability to interpret in terms of all four perspectives

Perspectives and examples of goals and measures

- | | |
|----------------------------------|---|
| ■ Financial | |
| Survival | Cashflow |
| Prosperity | Increased market share |
| ■ Customer | |
| Responsive supply | On-time delivery |
| Quality | % of returns |
| ■ Internal processes | |
| Manufacturing excellence | Cycle time |
| Design productivity | Engineering efficiency |
| ■ Innovation and learning | |
| Time to introduce to market | New product introduction vs competition |
| Technology leadership | Time to develop next generation of products |

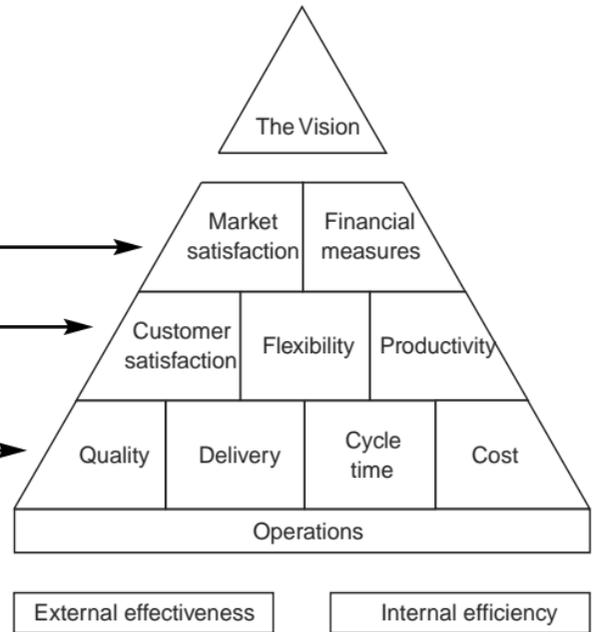
The performance pyramid links the overall strategic view of management with day to day operations.

1 At **corporate** level, financial and market objectives are set and actioned by ...

2 ... strategies developed at the **strategic business unit level**, which in turn are supported by ...

3 ... specific criteria at the **operational level**

Objectives for external effectiveness and internal efficiency are achieved through measures at the three levels.



Notes

6: Performance measures for organisational units

Topic List

Divisionalisation

Investment centre performance appraisal

Setting transfer prices

Multinational transfer pricing

Many organisations will be split up into a number of different business units with varying degrees of autonomy. In this chapter we consider a range of methods for measuring and managing the performance of such divisions. We also look at the issue of transfer pricing.

Ensure that you understand the organisational context of transfer pricing i.e. why transfer prices are necessary and when they are set. Then consider how prices are set. Also look at the wider context.

There are two common ways of structuring organisations:

- Functionally
- Divisionally

In general, a divisional structure will lead to decentralisation of the decision-making process.

Advantages of divisionalisation

- ✓ It can improve the decision-making process in two ways.
 - Quality
 - Speed
- ✓ The authority to act to improve performance should motivate divisional managers.
- ✓ Top management are freed from detailed involvement in day-to-day operations and can devote more time to strategic planning.
- ✓ Divisions provide valuable training grounds for future members of top management.

Disadvantages of divisionalisation

- ⊗ **Dysfunctional decision making** (a balance has to be kept between decentralisation of authority to provide incentives and motivation, and retaining centralised authority to ensure **goal congruence**)
- ⊗ Increase in costs of activities common to all divisions
- ⊗ Loss of control by top management

An investment centre is a profit centre with additional responsibilities for capital investment.

Return on investment (ROI)

Also known as the **return on capital employed (ROCE)**

Shows how much profit has been made in relation to the amount of capital invested. It is typically measured as (profit/capital employed) × 100%.

Residual income (RI)

This is calculated by deducting an imputed interest charge, based on investment in the investment centre, from profit. It is typically measured as follows.

	\$
Profit	X
Imputed interest (capital employed × cost of capital)	(X)
Residual income	<u>X</u>

ROI is generally regarded as the **key performance measure**.

- Ties in directly with the accounting process
- Measures the performance of a division/company as a single entire unit.

Both methods use the same basic figure for profit and investment, but residual income produces an absolute measure whereas the return on investment is expressed as a percentage.

Economic value added

Economic profit

- Costs which are normally treated as expenses under generally accepted accounting principles may be added back to NOPAT if these are considered as **investments building for the future**. Examples of these may be research and development, advertising, and goodwill. These are added back to accounting profit to reflect the economic reality of the expenditure. They are also included in net assets employed.
- Adjustments are sometimes made to economic depreciation so that it reflects the economic fall in asset value due to wear and tear or obsolescence.
- Interest is excluded from NOPAT as it is taken into account in the capital charge.
- In order to work out the capital charge, the replacement cost of net assets employed is used, multiplied by the weighted average cost of capital.

Measuring divisional performance: summary

Measure	Pros	Cons
ROI	<ul style="list-style-type: none">■ Can compare divisions of different sizes■ Aggregation is easy	<ul style="list-style-type: none">■ Short-term perspective■ Lack of goal congruence■ Valuation of assets■ Does not account for different risk
RI	<ul style="list-style-type: none">■ Can compare investments with different risk characteristics	<ul style="list-style-type: none">■ Can't compare divisions directly■ Valuation of assets■ Doesn't relate size of divisional income to size of investment
EVA [®]	<ul style="list-style-type: none">■ Real wealth for shareholders■ Less distortion by accounting policies■ Absolute value	<ul style="list-style-type: none">■ Short-term perspective■ Depends on historic data■ Adjustments to data■ Comparison of like with like

Aim

Maintain the right level of divisional autonomy

Ensure divisional performance is measured fairly

Ensure corporate profits are maximised

How

Transfer prices must be set to provide incentive and motivation, although head office authority will be required to ensure goal congruence and prevent dysfunctional decision making.

Transfer prices must be established at a fair commercial price to ensure appropriate behavioural decisions by divisional managers.

The transfer price should encourage divisional managers to agree on the amount of goods transferred, which will also be at a level which is consistent with overall organisational aims such as maximising company profit.

Correctly-set transfer prices are therefore a way of promoting divisional autonomy, ideally without prejudicing the measurement of divisional performance or discouraging overall corporate profit maximisation.

Limits within which transfer prices should fall

- **The minimum.** The sum of the supplying division's marginal cost and the opportunity cost of the item transferred
- **The maximum.** The lowest market price at which the receiving division could purchase the goods or services externally, less any internal cost savings in packaging and delivery

Example

Division A produces product D at a marginal cost of \$350. If a unit is transferred internally to division B, \$70 contribution is lost on an external sale. The item can be purchased externally for \$480.

- **Minimum.** Division A's minimum would be $\$(350 + 70) = \420
- **Maximum.** Division B's maximum would be \$480

Savings from producing internally rather than buying externally = \$60.

Opportunity cost

The opportunity cost included in determining the lower limit will be one of the following.

- Maximum contribution forgone by the supplying division in transferring internally rather than selling externally
- Contribution forgone by not using the same facilities for their next best alternative use

If there is **no external market** and no alternative uses for the facilities, **transfer price = standard variable cost of production.**

If there **is an external market** and no alternative uses for the facilities, **transfer price = market price.**

Divisionalisation

Investment centre
performance appraisal

Setting
transfer prices

Multinational
transfer pricing

Transfer prices based on market price

What is the ideal transfer price where a perfect external market exists ?



External market price
or

External market price less savings in selling costs

This applies whether or not variable costs and selling prices are constant.

Merits

Divisional autonomy. If profit centre managers are given freedom to negotiate prices with each other as though they were independent companies, market-based transfer prices will tend to result.

Divisional performance. Where a market price exists but the transfer price is a different amount, divisional managers will argue about the volume of internal transfers.

Corporate profit maximisation. Such an approach results in decisions which are in the best interests of the organisation as a whole.

Transfer prices based on cost

If there is **no external market**, the transfer price has to be based on cost.

- 1 Standard or actual?** The use of standard costs is fairer because if actual costs are used the transferring division has no incentive to control its costs – it can pass on its inefficiencies to the receiving division.
- 2 Variable cost?** The transferring division does not cover its fixed costs (although this problem can be overcome by central decisions or by some form of **dual pricing** or **two-part charging** system).
- 3 Full cost?** The transferring division makes no profit.
- 4 Full cost plus?** What margin will all parties perceive as fair?

**Goal congruent decisions will be made if the transfer price is set in the range where:
variable cost in the transferring division \leq net marginal revenue in the receiving division**

One resource in short supply

If only one resource is in short supply you can use the technique of **ranking options according to contribution per unit of scarce resource**.

G produces two products, P1 and P2.

- Both products use material M.
- Material M can be obtained from D Division of G or from E, an external supplier.
- Both sources of supply can also sell M on the external market.

The best policy is to transfer internally-produced M to product P2 production. Externally-bought M should be used to make P1.

Example

	D Division	E
Cost of material M	\$6	Unknown
External selling price per kg	\$13	\$16
Production capacity (kg)	5,000	7,000
	P1	P2
Kg of material M needed per unit	3	2
	\$	\$
Selling price	40.00	32
Conversion costs	10.00	8
Contribution before material costs	30.00	24
<i>Transferring material from D Division</i>	6.00	6
Contribution	24.00	18
Contribution per unit of scarce resource ($\div 3$ or 2)	8.00	9
Contribution before material costs	30.00	24
Buying material from E	16.00	16
Contribution	14.00	8
Contribution per unit of scarce resource ($\div 3$ or 2)	4.66	4

Factors affecting transfer prices in multinationals

Exchange rate fluctuations	The value of transfers is affected.
Taxation in different countries	Manipulation of profits is possible by raising/lowering transfer prices.
Import tariffs	It is possible to minimise costs by minimising transfer prices.
Exchange controls	Restrictions on the transfer of profits can be overcome if head office provides goods/services to the subsidiary and charges exorbitantly high prices.
Anti-dumping legislation	A government might insist on fair market value as a transfer price.
Competitive pressures	Transfer pricing can be used to enable divisions to match/undercut local competitors.
Repatriation of funds	Funds can be repatriated by manipulating transfer prices between subsidiaries
Transfer pricing is often abused by multinational organisations to avoid tax payments.	

Considerations for Hong Kong companies operating mainland China subsidiaries

Labour contract law

Effective 2008. Gives protection to employee rights in mainland China.

Transfer pricing regulations

Hong Kong and mainland China. Different methods of transfer pricing allowed (e.g. cost plus) but transfer prices must be equivalent to sales prices for as 'arm's length' transaction.

Double tax relief

Double tax agreement between Hong Kong and mainland China. Groups are not taxed twice on the same profits.

Withholding tax issues

HK investments in mainland China not assessed for capital gains tax.
No withholding tax or reduced tax rate for payments of dividends, royalties and interest from mainland China to Hong Kong.

7: Treasury management

Topic List

Role of Treasury function

Structure of Treasury function

In this chapter we consider the essential operations performed by the Treasury function, and how that function is structured and assessed.

Responsibilities of Treasury function

- **Liquidity (i.e. working capital) management:** measuring, monitoring and managing cash flow to protect solvency
- **Funding (i.e. long-term finance):** creating an optimal mix of equity and debt to meet capital expenditure and investment requirements
- **Financial risk management:** identifying potential risks and their impact and taking action to mitigate these

Treasury policies requiring Board approval

- Financial policy
- Funding
- Banks
- Liquidity
- Foreign exchange
- Interest rate hedging
- Use of financial instruments/hedging techniques
- Other ad hoc areas (e.g. off balance sheet finance)

Sources of information for the corporate treasurer

- Banks (commercial, international, merchant/investment)
- Stockbrokers
- Accountants
- Tax experts
- Professional bodies
- Consultants
- Other (government agencies, publications, internet)

Role of Board to examine activities and determine type and extent of exposure to risk

Cost or profit centre?

Cost centre: costs of the department can be charged to the other departments/subsidiaries on some basis that fairly reflect the benefits obtained, or treat the costs as a head office expense.

Profit centre: revenues could be recognised as follows:

- charge all other departments/subsidiaries a fee for its services based on current market rates
- earn a profit through its management of the group's exposure to interest rate and foreign exchange risk
- decide not to hedge all currency and interest rate risks, hoping to profit from unhedged favourable exchange rate and interest rate movements
- speculative activity



Advantages

- Treasury function may be able to make a significant contribution to group profit through undertaking some of the actions described above.
- Motivation improved, as assessed in terms of their contribution to group profit.

Disadvantages

- Additional administrative cost to collect data on the revenues of the treasury function as well as its costs.
- Problems are likely to arise in establishing a satisfactory charge for treasury's services to other departments/subsidiaries.
- The risks of speculation.
Corporate governance.

Notes

8: Working capital management

Topic List

Working capital management

Cash operating cycle

Working capital ratios

Inventory management

Receivables management

Management of payables

Cash management

Working capital funding

Working capital is made up of inventories, trade receivables and cash, less trade payables i.e. net current assets. A business must maintain each element of working capital at an appropriate level.

Working capital management

Cash operating cycle

Working capital ratios

Inventory management

Receivables management

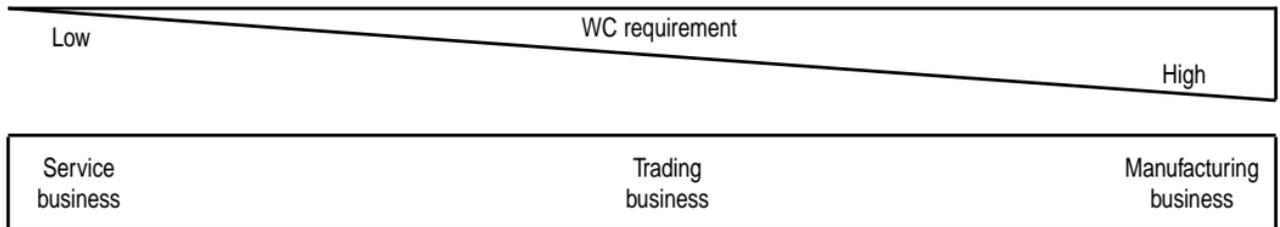
Working capital = current assets – current liabilities

Working capital management

Minimise risk of insolvency
(liquidity)

Maximise return on assets
(profitability)

- Conservative approach: reduce risk by holding high levels of WC
- Aggressive approach: reduce finance cost and increase profitability by holding minimum WC
- Moderate approach: a middle way



Cash operating cycle

the length of time between cash being spent at the start of production and cash being received from the customer

The average time raw materials remain in inventory
 less: the period of credit taken from suppliers
 plus: the time taken to produce the goods
 plus: the time taken by customers to pay for the goods

= Operating cycle

Inventory days	X
Add: Receivables' days	X
Less: Payables' days	(X)
Operating cycle	<u>X</u>

Working capital
management

Cash operating
cycle

Working
capital ratios

Inventory
management

Receivables
management

Working capital management ratios

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$\text{Acid test/quick ratio} = \frac{\text{Current assets (excluding inventory)}}{\text{Current liabilities}}$$

Receivables settlement period

$$= \frac{\text{Trade receivables}}{\text{Credit sales}} \times 365 \text{ days}$$

Payables payment period

$$= \frac{\text{Trade payables}}{\text{Credit purchases}} \times 365 \text{ days}$$

$$\text{Inventory days} = \frac{\text{Average inventory}}{\text{Cost of sales}} \times 365 \text{ days}$$

$$\text{Inventory turnover} = \frac{\text{Cost of sales}}{\text{Average inventory}}$$

Over-capitalisation

This is where there are excessive inventories, receivables and cash and very few payables. The funds tied up could be invested profitably.

Overtrading

Overtrading happens when:

- a company finances inventories and receivables out of current liabilities
- a business tries to do too much too quickly
- there is too little long-term capital
- liquidity problems ensue

Symptoms include:

- rapid increase in sales/current assets
- increased financing by credit so trade payables increase
- bank overdraft increases
- liquidity ratios fall

Working capital management

Cash operating cycle

Working capital ratios

Inventory management

Receivables management

Inventory costs

Holding costs

- Cost of capital
- Warehouse/handling costs
- Deterioration/obsolescence
- Insurance
- Pilferage

Procuring costs

- Ordering costs
- Delivery costs

Shortage costs

- Contribution from lost sales
- Emergency inventory
- Inventory shortfall costs

Just-in-time procurement

describes a policy of obtaining goods from suppliers at the latest possible time, avoiding the need to carry materials/component inventory.

Benefits of JIT

- ↓ Inventory holding costs
- ↑ Flexibility
- ↑ Quality
- ↓ Manufacturing lead times
- ↑ Labour productivity
- ↓ Labour/scrap/warranty costs
- Simplified inventory holding systems

Economic order quantity (EOQ)

is the optimal ordering quantity for an item of inventory which will minimise costs.

$$EOQ = \sqrt{\frac{2C_oD}{C_H}}$$

D = Usage in units

C_O = Cost of placing one order

C_H = Holding cost

Bulk discounts

Total cost will be minimised:

- At pre-discount EOQ level, so that discount not worthwhile, or
- At minimum order size necessary to earn discount

Calculate Purchasing costs + Holding costs + Ordering costs

Safety inventory

is held when demand is uncertain or supply lead time is variable.

$$\text{Average annual safety inventory cost} = \text{Safety inventory quantity} \times \text{Annual unit inventory holding costs}$$

Working capital management

Cash operating cycle

Working capital ratios

Inventory management

Receivables management

RECEIVABLES MANAGEMENT

Overall terms

- No credit at all?
- Credit only to particular classes of customer
- Total credit offered is X% of sales

Procedures for offering credit

- Obtaining references
- Reviewing accounting information
- Customer visits
- Formal agreement

Control

- Debtors' ageing reports
- Chasing slow payers
- Complies with consumer credit legislation
- Probationary period
- Settlement terms

Advantages of early settlement discounts

- Encourage customer to pay earlier and thus reduce financing costs
- Improve liquidity
- Encourage customers to buy

Cost of early settlement discount

$$\left[\frac{D}{100 - D} \times \frac{365}{N - S} \right] \%$$

Where:

D is discount offered

N is the number of days' credit offered net for no discount

S is the number of days' credit allowed with settlement discount

Example

Henry offers with no discount 3 months' credit. The company is considering a 5% discount to all customers paying within one month.

$$\text{Cost of early settlement discount} = \left(\frac{5}{100 - 5} \times \frac{365}{90 - 30} \right) \% = 32\%$$

Factoring

- turning over responsibility for collecting debts to a specialist institution (factoring company), which advances a proportion of the monies due

Invoice discounting

- the purchase of a selection of invoices at a discount

Impact of foreign trade

- Larger inventories
- Higher accounts receivable
- Increased risk of irrecoverable debts

Management of
trade payables

- Obtaining satisfactory credit ✓
- Extending credit if cash short ✓
- Good relations ✓

Cost of lost cash
discounts

$$\frac{d}{100 - d} \times \frac{365}{t}$$

where d is % discount
t is reduction in payment
period in days necessary to
obtain early discount

Trade credit

Advantages

- Reduces investment in working capital
- Short-term source of finance – no cost

Risks

- Supplier might withdraw credit facility if payment is delayed for too long
- Increase credit risk of businesses

Cash forecast

This is a statement in which estimated future cash receipts and payments are tabulated in such a way as to show the forecast cash balance of a business at defined intervals.



Enables management to make forward planning decisions

1

Sort out cash receipts from customers

2

Establish whether any other cash income will be received

3

Sort out cash payments to suppliers

4

Establish materials inventory changes → quantity and cost of materials purchases

5

Establish when suppliers will be paid

6

Establish when any other cash payments will be made

7

Bottom of budget must show

Opening position

Net cash flow

Closing position

Overdraft

Investments

Credit control

Cash position	Appropriate management action
Short-term surplus	Pay accounts payable early to obtain discount Attempt to increase sales by increasing accounts receivable and inventories Make short-term investments
Short-term deficit	Increase accounts payable Reduce accounts receivable Arrange an overdraft
Long-term surplus	Make long-term investments Expand Diversify Replace/update non-current assets
Long-term deficit	Raise long-term finance (such as via issue of share capital) Consider shutdown/disinvestment opportunities

Treasury department – manages liquidity, short-term investment, borrowings, foreign exchange and other risks for large company

Baumol model – same form as the EOQ formula for inventory management

Costs are minimised when:

$$Q = \sqrt{\frac{2 \times C \times S}{i}}$$

Where

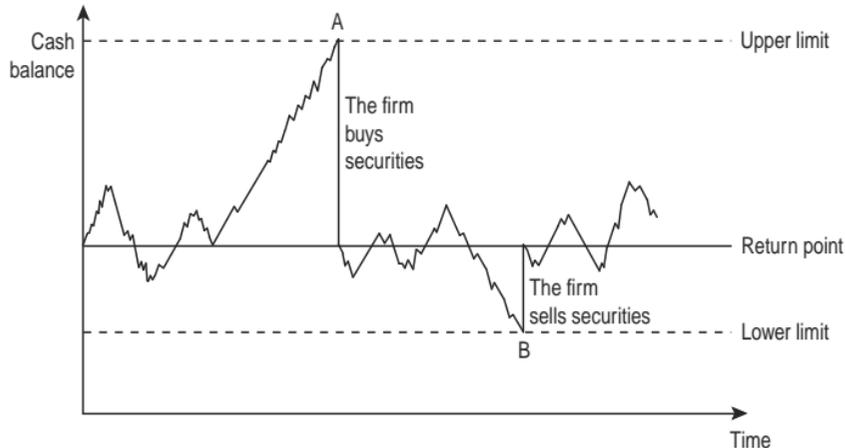
- S = demand for cash
- C = cost of raising cash (for example, selling securities to turn into cash)
- i = interest cost of holding cash (i.e. opportunity cost)
- Q = the total amount to be raised to provide for S

Drawbacks

- Difficult to predict amounts required over future periods
- No buffer inventory of cash is allowed for; may be costs associated with running out of cash
- May be other normal costs of holding cash which increase with the average amount held

Miller-Orr model

- (a) The cash balance held should always be close to a 'normal level'/'return point' (RP).
- (b) If the cash balance increases and reaches an 'upper limit' (UL), firms should buy/invest sufficient securities to utilise the excess cash and bring the cash balance back to the RP.
- (c) If the cash balance decreases and reaches a 'lower limit' (LL), firms should sell/dispose of sufficient securities to bring the balance back to the RP.



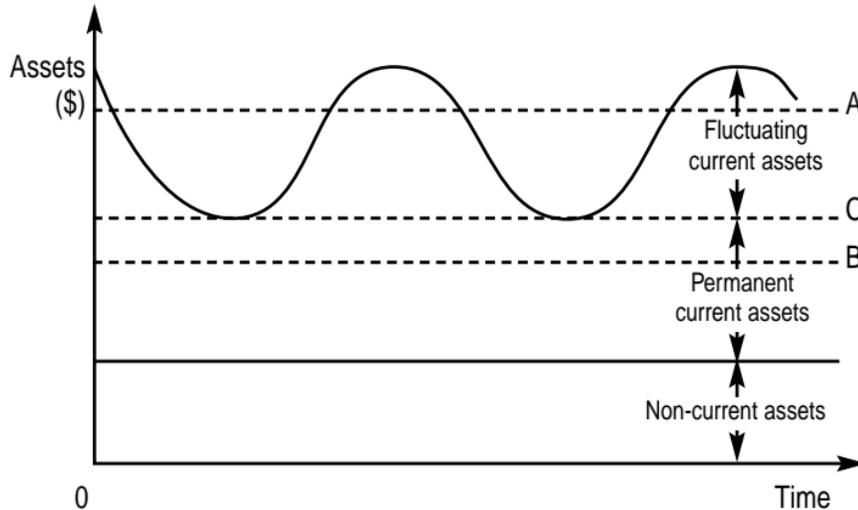
Use of Miller-Orr model

- (a) Set the lower limit for the cash balance (could be zero or some minimum safety margin above zero).
- (b) Estimate the variance of cash flows from sample observations over a lengthy period.
- (c) Calculate the interest rate and transaction cost (assumed to be fixed) for each sale or purchase of securities.
- (d) Compute the upper limit and the return point from the model and implement the limits strategy.

Return point (RP) = Lower limit + (1/3 x spread)

$$\text{Spread} = 3 \times \left(\frac{3}{4} \times \frac{\text{Transaction costs} \times \text{variance of cash flows}}{\text{Interest rate}} \right)^{\frac{1}{3}}$$

Funding strategy



In A (conservative) all permanent and some fluctuating current assets financed out of long-term sources; may be surplus cash for investment.

In B (aggressive) all fluctuating and some permanent current assets financed out of short-term sources, possible liquidity problems.

In C long-term funds finance permanent assets, short-term funds finance non-permanent assets.

Notes

9: Types and sources of finance

Topic List

Overview of finance

Short-term finance

Long-term finance – debt

Long-term finance – equity

In this chapter we consider sources of finance for companies, both long-term and short-term.

You may be asked as part of a question to discuss the main features and advantages and disadvantages of different types of finance or to recommend a finance package.

Short-term finance

- overdrafts
- short term loans
- trade credit
- lease finance

Long-term finance

- debt
- leasing
- venture capital
- equity

Financial assets and liabilities should be managed to deal with risks arising from movements in interest rates, exchange rates, commodity prices and share prices.

Internal sources of finance

- retained earnings
- increasing working capital efficiency

Overdrafts and loans

Overdrafts are used for short-term financing needs. A maximum facility is granted; the bank will want any long-term balance reduced. Overdrafts are repayable on demand; security may be specific assets or over the whole business.

Loans can be short – a fixed amount, for a specified period repaid at a specified time or in defined instalments, medium- and long-term.

Overdrafts

- Designed for day to day help
- Only pay interest when overdrawn
- Bank has flexibility to review
- Can be renewed
- Won't affect gearing calculation

Overdrafts v loans

Loans

- Medium-term purposes
- Interest and repayments set in advance
- Bank won't withdraw at short notice
- Shouldn't exceed asset life
- Can have loan-overdraft mix

Loan stock (bonds)

The stock has a nominal value, the debt owed by the company, and interest is paid on this amount. Security may be given.

Fixed charge (specific assets, can't dispose without lender's consent)

Floating charge (class of assets, can dispose until default)

Deep discount bonds are issued at a large discount to nominal value of stock and are redeemable at or above par.

Zero coupon bonds are issued at a discount, with no interest paid on them.

Subordinated loans are unsecured and repayable after other debts; more risky for lender hence offer higher rates of return.

Fixed or floating rate?

- Interest on bonds usually fixed rate.
- It may be possible to issue floating rate bonds
- Interest on medium-term bank loan is usually variable rate

Factors influencing choice of debt

- Availability
- Market conditions
- Term/duration of funding
- Portfolio of debt: spread of maturities
- Fixed or floating rate interest
- Purpose
- Flexibility of borrowing sources
- Collateral and covenants

Credit ratings

Bonds need a **credit rating** to be traded on the international bond markets (expectation of bond investors).

Debentures

are the written acknowledgement of debt including provisions about interest payment and capital repayment. The trust deed allows trustees to intervene in the event of breaches. The market price of debentures depends on coupon rate relative to market rates. Debenture is a legal term for a form of bond.

Advantages of debt

- Interest tax-deductible
- Can offer security
- Rank above shares in liquidation
- Issue costs lower than for shares
- No change in control
- Lenders don't participate in profits

Disadvantages of debt

- Interest must be paid each year
- Funds required for redemption or repayment
- Increased financial risk for ordinary shareholders
- Shareholders may demand higher return
- Articles or covenants restrict borrowing

Convertible bonds

are fixed return securities convertible at pre-determined rates and at holder's option into ordinary shares at a pre-determined price. Conversion premium is the difference between the issue value of stock and conversion value at issue date. Companies aim to issue stock with **greatest possible conversion premium**. Convertibles normally have lower rate of return than straight debt, representing the price investors pay for conversion rights.

Advantages of convertibles

- Sweetener for debt
- Lower interest than straight debt
- Conversion rights substitute for other lender conditions
- Equity issued at higher price than current price
- Possibility of forced conversion
- Issue costs not required on conversion

Disadvantages of convertibles

- Issuer loses out if market price of shares is above conversion price
- Debt may have to be repaid
- Borrowers reluctant to invest due to lower yield
- No extra funds if conversion takes place

Other sources of debt

Bank credit arrangements

- Line of credit
- Revolving credit agreement
- Term loan
- Bridging loan
- Letter of credit

Loan agreement – contract between borrower and lender specifying conditions and terms of loan

Ratings agency – assesses the capacity of a potential/existing borrower to pay interest and repay principal, e.g. Standard & Poor's, Moody's

Leasing

is a contract between the lessor and lessee for the hire of a specific asset.



Leasing

- **Lessor** has ownership of asset
- **Lessee** has possession and use of asset on payment of specified rentals over period

Hire purchase

is a form of instalment credit, where ownership passes to the customer on the payment of the final credit instalment (unlike leasing, lessee never becomes owner of goods).



Hire purchase

- Supplier sells goods to finance house
- Supplier delivers goods to customer who purchases them
- HP arrangement exists between finance house and customer

Hire purchase payments consist of capital element (towards asset cost) and interest.

Operating leases

- Lessor bears most of risks and rewards
- Lessor responsible for servicing and maintenance
- Period of lease short, less than useful economic life of asset
- Asset not shown on lessee's statement of financial position

Advantages of leasing

- Supplier paid in full
- Lessor receives (taxable) income and capital allowances
- Help lessee's cash flow
- Cheaper than bank loan?

Finance leases

- Lessee bears most of risks and rewards
- Lessee responsible for servicing and maintenance
- Primary period of lease for asset's useful economic life, secondary (low-rent) period afterwards
- Asset shown on lessee's statement of financial position

Sale and leaseback

is when a business agrees to sell one of its assets to a financial institution and leases it back.

Equity finance – raised through sale of ordinary shares to investors via new issue or rights issue.



but

- greater regulation, accountability, scrutiny
- additional costs
- more demanding investors

Initial public offer (IPO)

The company sells shares to the public at large. Issuing house acquires a large block of shares and publishes invitation to public to apply for shares at a fixed price or on a tender basis.

Stock exchange introduction

Listing with no shares made available to market (to enhance marketability or provide future access to capital).

Costs of share issues

- Underwriting costs
- Stock Exchange listing fees
- Issuing house, solicitors, auditors, public relation fees
- Printing and distribution costs
- Advertising

Placing

Placing means arranging for most of an issue to be bought by a small number of institutional investors. It is cheaper than an offer for sale.

Pricing share issues

- Price of similar companies
- Current market conditions
- Future trading prospects
- Premium on launch
- Price growth after launch
- Higher price means fewer shares and less earnings dilution

Rights issue

is an offer to existing shareholders to buy new shares.

Offer price will be lower than current market price

Advantages of rights issue

- Lower issue costs than offer for sale
- Shareholders acquire shares at discount
- Relative voting rights unaffected

Open offer

similar to rights issue, except that rights cannot be sold.

Value of rights

Theoretical ex-rights price – issue price

Consideration issue

issue of shares for consideration other than cash:
example - in a takeover

Theoretical ex-rights price

$$\frac{1}{N+1} ((N \times \text{cum rights price}) + \text{issue price})$$

where N = number of shares required to buy one new share

10: Dividend policy

Topic List

Theories of dividend policy

Practical factors

Share repurchase and scrip dividends

Aswath Damodaran framework

In this chapter we consider both the theories and the practical aspects of how much a company should pay out as annual dividend.

Dividend policy – determines the proportion of profits paid to shareholders + the amount retained for internal financing of new long-term projects.

Residual theory

If a company can identify projects with positive NPVs it should invest in them and only when these investment opportunities are exhausted should dividends be paid.

Traditional view

Focuses on effects on share price. The dividends may be treated as a signal to investors. A company needs to take account of different clientele of shareholders and their preference for dividend/capital growth.

Modigliani and Miller (irrelevancy theory)

MM argue that the level of dividends is irrelevant, that shareholders will be indifferent between a new investment being funded by a cut in dividend or new equity finance.

The theory assumes:

- No tax
- No transaction costs
- All relevant information available

MM argue that if a dividend is paid, shares will suffer loss in value equal to dividend because of the need to obtain (and reward) outside finance. Shareholders can 'manufacture' own dividends through selling shares.

Arguments against MM

- Different tax rates on dividends/capital gains affect shareholder preferences
- Companies prefer earnings retention if capital is rationed
- Imperfect markets mean shareholders want high dividends as funds for further investment
- Transaction costs make selling shares less attractive
- Limits on available information lead to companies maintaining dividend levels to retain members' confidence

Dividends

In practice directors determine dividends, shareholders can vote to reduce recommended dividends, but not increase them. Directors may favour retaining earnings as:

- Retained cash can be used to finance investments without involving investors/outside investors
- No costs
- Avoids possibility of change of control

As market lacks information about underlying cash flows, dividends provide signal of prospects

- Consistent dividend policy
- Preferably steady growth
- May be used to defend a takeover

Practical aspects

- Need to remain profitable
- Law on distributable profits
- Dividend restraints imposed by loan agreements
- Effect of inflation
- Need to retain some profits to maintain operating capability
- Limit level of gearing
- Need for ready cash to pay dividends
- Other sources of available finance
- Investors' expectations

Share repurchase

The purchase by a company of its own shares must be in accordance with requirements of legislation.

Benefits

- Use for surplus cash
- Increase in earnings per share
- Increase in gearing
- Prevention of takeover

Disadvantages

- Determination of purchase price
- No better use of funds
- Tax disadvantage for shareholders

Scrip dividend

is a dividend in the form of new shares. Converts equity into share capital.

- Means of retaining funds
- Enhanced scrip dividends more valuable than cash alternative

Stock split

are ordinary shares split into two shares of equal but lesser value

- Creates cheaper, more marketable shares
- Reserves unaffected

Aswath Damodaran framework

To analyse dividend policy:

- How much cash is available to be paid as dividends (the free cash flow to equity, or FCFE) *and* how much is actually paid to shareholders?
- How good are the investment projects available to the company?

		FCFE	
		FCFE < Dividends	FCFE > Dividends
ROE versus Required Return	ROE > Required Return	(1) Invest in projects and cut dividends	(2) Maximum flexibility in dividend policy
	ROE < Required Return	(3) Reduce investment and cut dividends	(4) Reduce investment and increase dividends

11: Identifying, measuring and managing financial risks

Topic List

Risk management framework

Types of risk

Risk identification and assessment

Enterprise risk management

Currency risk

Interest rate risk

This chapter summarises the main risks organisations face and sets out a framework for analysing and managing risks, in particular foreign currency and interest rate risk.

Key issues for treasury management

- | | |
|--------------------------------|-----------------|
| (1) What can go wrong? | Risk assessment |
| (2) What can be done about it? | Risk control |
| (3) How is it to be paid for? | Risk financing |



Risk management: the process of identifying and assessing (analysing and evaluating) risks and the development, implementation and monitoring of a strategy to respond to those risks.



Three levels of risk management

- **Strategic:** risks derived from external sources – the responsibility of the board of directors
- **Operational:** risks derived from the processes – the responsibility of process owners, but risk management solutions must be shared with the rest of the company
- **Tactical:** to synchronise strategic and operational risks – the responsibility of a 'risk manager'

Financial

Risk that financial conditions could change or be less favourable than expected, resulting in a deterioration of business positions in financial terms (i.e. profitability and solvency).

Financial risks	
Liquidity risk	Having insufficient cash resources to meet day-to-day obligations, or to take advantage of profitable opportunities when they arise
Interest rate risk	Adverse movements in interest rates will affect profit by increasing interest expense or reduce interest income
Foreign exchange risk	Adverse movement in the rate of exchange used to convert foreign currency revenues, expenses, cash flows, assets or liabilities to the home currency results in reduced profitability and/or shareholder wealth
Commodity price risk	A price change in a key commodity input or output adversely affects financial performance
Business operating risk	Financial loss arising from the operational activities of the treasury function
Credit risk	The other party to a financial transaction completely defaults and does not meet its financial obligations or fails to meet its financial obligations on time

Business

Risk that a company's commercial activities and operations are less successful than in the past or as forecast (for example, a fall in revenues due to a competitor introducing a rival product).

Political	Operational	Legal
Regulation	Personnel	Contracts
Government action	Time	Product liability
	Criminal	
	Consequential	
	Physical damage	

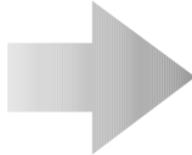
Risk management
framework

Types of
risk

Risk identification
and assessment

Enterprise risk
management

Currency
risk



Risk = probability (likelihood) ×
financial consequences (impact)

		PROBABILITY		
		Low	Medium	High
IMPACT	High	<i>Failure of computer systems</i>	<i>Loss of sales due to macroeconomic factors</i>	<i>Loss of senior or specialist staff</i>
	Medium	<i>Loss of key customers</i>		
	Low		<i>Loss of suppliers</i>	<i>Loss of lower-level staff</i>

Enterprise risk management (ERM)

is a process effected by the board of directors, management and other personnel, applied in strategy setting and across the enterprise, to identify potential events that may affect the entity and to manage risks to be within its risk appetite, and to provide reasonable assurance regarding the achievement of objectives.

ERM characteristics

- Process
- Operated at every level
- Applied in strategy setting
- Applied across enterprise
- Identifies key risks and manage the risk
- Provides reasonable assurance
- Geared to achievement of objectives

Currency risk

- Exporter
- Importer
- Transaction in overseas capital market
- Being overseas subsidiary
- Having overseas subsidiary

Currencies are bought and sold spot or forward:

Spot rate: today's exchange rate

Forward rate: rate set now for future exchange

Remember!

Bank	sells	LOW
	buys	HIGH

For example, if bank is buying and selling Yen, selling (offer) price may be 11.48 Yen/\$, buying (bid) price may be 11.55 Yen/\$.

Buying or selling currency forward is a common method of hedging short term exposures to currency risk.

Economic risk

is the risk that the present value of a company's future cash flows might be reduced by adverse exchange rate movements.

Economic exposure can be longer-term (continuous currency depreciation) or can arise even if don't trade overseas (effects of dollar strengthening)

- Match assets and liabilities, finance foreign subsidiary with loan in that country
- Diversify supplier/customer base
- Diversify operations worldwide

Translation risk

is the risk that the organisation will make exchange losses when the accounting results of its foreign branches or subsidiaries are translated into the home currency.

Translation losses can arise from restating the book value of a foreign subsidiary's assets at the exchange rate at the period end date.

Only important if changes arise from loss of economic value.

Transaction risk (short term)

is the risk of adverse exchange rate movements between the date the price is agreed and the date cash is received/paid, arising during normal international trade.

Invoicing in buyer's currency

This means that the exporter bears exchange risk but may have marketing advantages/market may require invoicing in particular currency (US dollar). Exporter may be able to offset payments in foreign currency, and may be able to obtain loan on favourable terms.

Other direct risk reduction methods

- Invoicing in own currency
- Matching receipts and payments
- Lead payments (payments in advance)
- Lagged payments (delaying payments)
- Matching assets and liabilities

Netting

is the process of setting off credit against debit balances so that only the reduced net amounts are paid by currency flows.

Causes of exchange rate fluctuations

Expectations theory/ Interest rate parity

$$\text{Future spot rate A/B} = \text{Spot rate A/B} \times \frac{1 + \text{B's interest rate}}{1 + \text{A's interest rate}}$$

Purchasing power parity

$$\text{Future spot rate A/B} = \text{Spot rate A/B} \times \frac{1 + \text{B's inflation rate}}{1 + \text{A's inflation rate}}$$

Fisher effect

$$\frac{1 + i_a}{1 + i_b} = \frac{1 + h_a}{1 + h_b}$$

where $i_{a/b}$ = nominal interest in country a/b

$h_{a/b}$ = inflation rate in country a/b

Forward exchange contract

A firm and binding contract

For the purchase/sale of a specified quantity of a stated foreign currency

At a rate fixed at the time the contract is made

For performance at a future time agreed when contract is made

Advantages

- Any amount
- Flexible length

Forward rate

An exchange rate set for currencies to be exchanged at a future date.

Forward rates as adjustments to spot rates

Forward rate cheaper	–	Quoted at discount
Forward rate more expensive	–	Quoted at premium

Disadvantages

- Counterparty default
- Difficult to cancel

Money market hedging

Future foreign currency payment

- 1 Borrow now in home currency
- 2 Convert home currency loan to foreign currency
- 3 Put foreign currency on deposit
- 4 When have to make payment
 - (a) Make payment from deposit
 - (b) Repay home currency borrowing

Future foreign currency receipt

- 1 Borrow now in foreign currency
- 2 Convert foreign currency loan to home currency
- 3 Put home currency on deposit
- 4 When cash received
 - (a) Take cash from deposit
 - (b) Repay foreign currency borrowing

Futures terminology

Futures contract

Obliges buyer/seller to purchase/sell specified quantity at predetermined price when contract expires

Contract size

Fixed minimum quantity of currency bought or sold using futures contract

Basis

Spot price – futures price

Basis risk

The risk that futures price movement may differ from underlying movement

Settlement date

The date when trading on a futures contract ceases and accounts are settled (but positions are usually closed out before this date)

What type of contract

Transaction on future date			Now		On future date (to close out)	
Receive	currency		currency futures	Sell	Buy	currency futures
Pay	currency		currency futures	Buy	Sell	currency futures

Advantages and disadvantages of futures contracts

Advantages

- Transaction costs lower than forward contracts
- Futures contract not closed out until cash receipt/payment made

Disadvantages

- Can't tailor to user's exact needs
- Only available in limited number of currencies
- Hedge inefficiencies
- Conversion procedures complex if dollar is not one of two currencies being traded

Currency option

is a right to buy or sell currency at a stated rate of exchange (strike rate) at some time in the future (on or before expiry date).

Cost of option = Premium

Call – right to buy at fixed rate

Put – right to sell at fixed rate

Over the counter options are tailor-made options suited to a company's specific needs.

Traded options are contracts for standardised amounts, only available in certain currencies, traded on an exchange.

Why option is needed

- Uncertainty about foreign currency receipts or payments (timing and amount)
- Support tender for overseas contract
- Allow publication of price lists in foreign currency
- Protect import/export of price-sensitive goods

What type of option

Transaction on future date			Now		On future date		
Receive	currency		Buy	currency put		Sell	currency
Pay	currency		Buy	currency call		Buy	currency

Drawbacks of options

- Cost dependent on expected volatility
- Pay on purchase
- Tailor-made options aren't negotiable
- Traded options not in every currency

Option premiums

Cost (premium) depends on:

- The exercise price
- Maturity date
- Volatility and interest rates
- Interest rate differentials

Currency swaps

In a currency swap, equivalent amounts of currency are swapped for a period. However the original borrower remains liable to the lender (counter party risk).

Advantages of currency swaps

- Flexibility – any size and reversible
- Can gain access to debt in other countries
- Restructuring currency base of liabilities
- Conversion of fixed to/from floating rate debt
- Absorbing excess liquidity
- Cheaper borrowing
- Obtaining funds blocked by exchange controls

Risks of swaps

- Credit risk
Counterparty defaults
- Position or market risk
Unfavourable market movements
- Sovereign risk
Political disturbances in other countries
- Spread risk
For banks which combine swap and hedge
- Transparency risk
Accounts are misleading

A UK company, Edward Ltd, wishes to borrow US dollars to finance an investment in America. Edward's treasurer is concerned about the high interest rates the company faces because it is not well-known in America. Edward Ltd could make an arrangement with an American company, Gordon Inc, attempting to borrow sterling in the UK money markets.

Example

Step 1

Gordon borrows US \$ and Edward borrows £. The two companies then swap funds at the current spot rate.

Step 2

Edward pays Gordon the annual interest cost on the \$ loan. Gordon pays Edward the annual interest cost on the £ loan.

Step 3

At the end of the period the two companies swap back the principal amounts at the spot rate/predetermined rate.

Interest rate risk

- Fixed vs floating rate debt** Change in interest rates may make type of borrowing chosen the less attractive option
- Currency of debt** Effect of adverse movements if borrow in another currency
- Term of loan** Having to re-pay loan at time when funds not available => need for new loan at higher interest rate
- Term loan vs overdraft** Have to pay commitment fee with overdraft, but only be charged interest when overdrawn. Term loan will result in interest charge for whole term. Rates of interest on term loan and overdrafts will differ.
- Mix of fixed/floating rate debts** Too much fixed => extra cost if market rates fall
Too much variable => extra cost if market rates rise

Gap analysis – group together assets and liabilities that are sensitive to interest rate changes according to their maturity dates.



- negative gap – a firm has a larger amount of interest-sensitive liabilities maturing at a certain time than it has interest-sensitive assets maturing at the same time.

exposure if interest rates rise by the time of maturity

- positive gap – the amount of interest-sensitive assets maturing in a particular time exceeds the amount of interest-sensitive liabilities maturing at the same time.

lose out if interest rates fall by maturity

Basis risk – a company which has size-matched assets and liabilities, and is both receiving and paying interest, may still have interest rate exposure if the floating rates are not determined using the same basis, e.g. one may be linked to HIBOR but the other not.

Reasons why interest rates differ

- Risk
- Need to make profit on re-lending
- Duration of lending
- Size of loan
- International interest rates
- Different types of financial asset

Methods of hedging

Internal – Matching and smoothing

External – Forward Rate Agreements (FRAs)

- Interest rate futures
- Interest rate options
- Interest rate swaps

Forward rate agreement (FRA)

is an agreement, typically between a company and a bank, to fix the interest rate charged/received on future borrowing or bank deposits.

A 3-9 FRA starts in three months and lasts for six months.

FRA

Advantages

- Protection provided
- Flexibility on time and size
- Low cost

Disadvantages

- Rate > current market
- Falling interest rate
- FRAs expire and need to be renegotiated
- No market for these

Netting

Aggregating and hedging net exposure.

Smoothing

Maintaining a balance between fixed and floating rate borrowing.

Matching

Matching assets and liabilities that have a common interest rate.

Pooling

If organisation has different accounts with same bank, pooling balances for interest charges and overdraft limits.

Interest rate futures

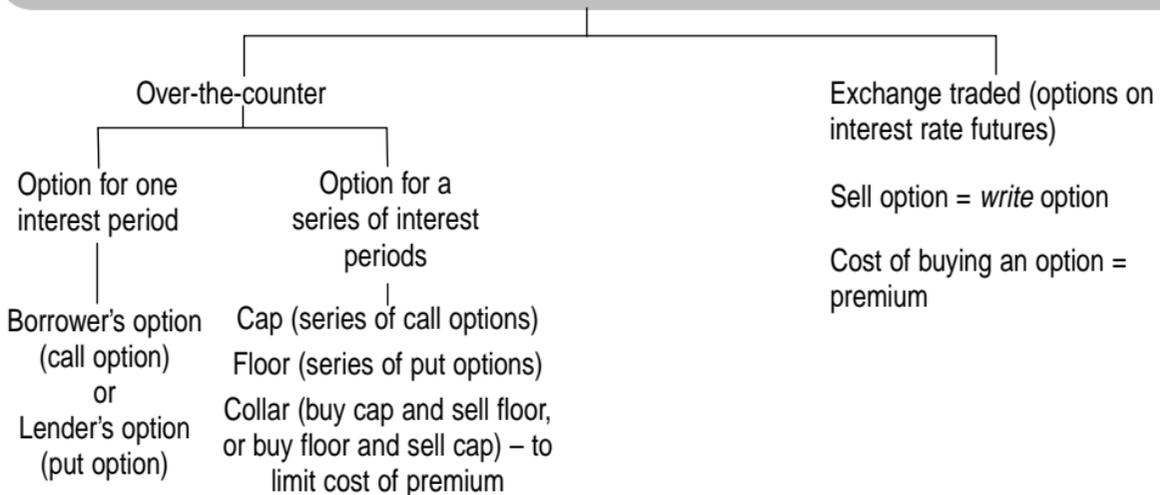
Interest rate futures hedge against interest rate movements. The terms, amounts and periods are standardised:

- The futures prices will vary with changes in interest rates
- Outlay to buy futures is less than buying the financial instrument
- Price of short-term futures quoted at discount to 100 par value (93.40 indicates deposit trading at 6.6%)

Interest rate futures	
<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none">■ Cost■ Amount hedged■ Traded so can be sold on	<ul style="list-style-type: none">■ Inflexibility of terms■ Basis risk■ Daily settlement

Interest rate option

grants the buyer the right, but not the obligation, to deal at an agreed interest rate at a future maturity date.



Interest rate swaps

are transactions that exploit different interest rates in different markets for borrowing, to change between fixed rate and variable rate payments. It may also be possible to reduce borrowing costs.

Example

	Company A (9%)		Company B (LIBOR + 1%)
Interest paid on loan			
Swap			
A pays to B	(LIBOR + 1%)	→	LIBOR + 1%
B pays to A	9%	←	9%
	<u>LIBOR + 1%</u>		<u>9%</u>

Advantages

- Flexibility and costs
- Use of credit ratings
- Capital structure
- Risk management
- Easy to arrange
- Predictability of cash flows

Disadvantages

- Counterparty risk
- Become subject to floating interest rates
- Lack of liquid market

Uses of interest rate swaps

- Switching from paying one type of interest to another
- Raising less expensive loans
- Securing better deposit rates
- Managing interest rate risk
- Avoiding charges for loan termination

12: Investment appraisal

Topic List

Project appraisal

Relevant cash flows

Payback

Return on capital employed

DCF

Inflation

Taxation

Risk and uncertainty

Capital rationing

Post-completion audit

Companies are faced with possible investment opportunities and managers need a basis on which to decide whether to accept or reject each possible opportunity. This chapter considers various aspects of project appraisal.

Project appraisal

Relevant cash flows

Payback

Return on capital employed

DCF

Investment is spending with a view to obtaining future benefits. This may be in the long term (capital expenditure) or short term (investment in working capital).

Investment decisions

- Whether or not to undertake investments
- Choosing between mutually exclusive investments
- When capital is in short supply choosing which investments for the money available

Steps in project appraisal

- Origination of proposals
- Project screening
- Analysis and acceptance
- Monitoring and review

Methods of project appraisal

- Payback period
- Accounting rate of return (ARR)
- Net present value (NPV)
- Discounted payback
- Internal rate of return (IRR)

Non-financial factors in project appraisal

- Legal issues
- Ethical issues
- Government regulation
- Political issues
- Quality implications
- Personnel issues
- Behavioural factors

Opportunity costs

Costs incurred or **revenues** lost from diverting **existing resources** from their best use.

Example

Costs of diverting a salesman to new project from existing activities, will be income he would have generated from existing activities and *not* his salary, which would be paid whatever he's involved with.

Finance cash flows

Ignore dividend and interest payments in DCF calculations. Interest is effectively dealt with in cost of capital.

Relevant benefits: increased cash flows; savings; other intangible benefits, e.g. customer satisfaction.

Cash flows not profits

Future incremental cash flows

- Ignore sunk costs
- Ignore depreciation
- Ignore apportioned fixed overheads

Other costs

- Tax
- Working capital
- Infrastructure
- Market, e.g. research, promotion and branding
- Human resource, e.g. training and reorganisation

Payback

is the time taken for the cash inflows from a capital investment project to equal the cash outflows, usually expressed in years.

It is used as a minimum target/first screening method.

Example

\$'000	P	Q
Investment	(60)	(60)
Yr 1 cash	20	50
Yr 2 cash	30	20
Yr 3 cash	50	5

Q pays back first, but ultimately P's cash inflows are higher on the same amount of investment.

Advantages

- Simple to calculate and understand
- Concentrates on short-term, less risky flows
- Can identify quick cash generators

Disadvantages

- Ignores timing of flows after payback period
- Ignores total project return
- Ignores time value of money
- Arbitrary choice of cut-off

Project appraisal

Relevant cash flows

Payback

Return on capital employed

DCF

Return on capital employed (ROCE)

- Also known as accounting rate of return (ARR) or return on investment (ROI).
- Can be used to rank projects taking place over a number of years (using average profits and investment).
- Can also rank mutually exclusive projects.

Method of calculation

$$\frac{\text{Estimated average profits}}{\text{Estimated average investment}} \times 100\%$$

$$\text{Where average investment} = \frac{\text{capital cost} + \text{disposal value}}{2}$$

Advantages

- Quick and simple calculation
- Easy to understand % return
- Looks at entire project life

Disadvantages

- Takes no account of timing
- Based on accounting profits, not cash flows
- Relative, not absolute, measure
- Ignores time value of money
- Takes no account of project length

ROCE: Example

Equipment J has a capital cost of \$100,000 and a disposal value of \$20,000 at the end of its five-year life. Profits before depreciation over the five years total \$150,000.

∴ Total profit after depreciation = $$(150,000 - 80,000) = \$70,000$

Average annual profit after depreciation = \$14,000

(Capital cost + disposal value) / 2 = \$60,000

ARR = $(14/60) \times 100\% = 23\%$

Project appraisal

Relevant cash flows

Payback

Return on capital employed

DCF

Present value

The cash equivalent now (X) of a sum of money (V) receivable or payable at the end of n time periods.

Discounting provides the formula $X = V/(1+r)^n$, where r is the rate of return.

Perpetuities

An annual constant cash flow forever.

The PV of \$1 pa in perpetuity at $r\% = \$1/r$ (where r is a decimal).

Annuities

An annual constant cash flow for a number of years.

Use discount factors from **cumulative present value tables**.

Example

PV of \$1,000 in years 3 to 6 at a rate of $r\% =$

$$\begin{array}{l} \$1,000 \times \left[\begin{array}{l} \text{PV of \$1 pa for yrs 1-6 at } r\% = X \\ \text{PV of \$1 pa for yrs 1-2 at } r\% = \underline{X} \\ \text{PV of \$1 pa for yrs 3-6 at } r\% = \underline{\underline{X}} \end{array} \right. \end{array}$$

Net present value (NPV)

is the value obtained by discounting all cash flows of project by target rate of return/cost of capital. If NPV is positive, the project will be accepted, if negative it will be rejected.

Features of NPV

- Uses all cash flows related to project
- Allows timing of cash flows to be considered
- Can be calculated using generally accepted method

Rules of NPV calculations

Include

- Effect of tax allowances
- After-tax incremental cash flows
- Working capital requirements
- Opportunity costs

Exclude

- Depreciation
- Dividend/interest payments
- Sunk costs
- Allocated costs and overheads

Assumptions in the NPV model

- Forecasts are certain.
- Information is freely available and costless.
- The discount rate is a measure of the opportunity cost of funds which ensures wealth maximisation for *all* individuals and companies.

Discount factors

Present value tables cover integer costs of capital from 1% to 20% for 1 to 20 years. If you require a discount factor for a non-integer interest rate (say 12.5%) or a period of time greater than 20 years, use $1/(1+r)^n$, where r = cost of capital and n = number of years.

Timing of cash flows

- A cash outlay to be incurred at the beginning of an investment project ('**now**') occurs at time 0 and will have a present value = outlay (since PV of \$1 now = \$1).
- A cash flow occurring **during the course of a time period** is assumed to occur at the end of the time period.
- A cash flow occurring **at the beginning of a time period** is assumed to occur at the end of the previous time period.

	Year 0	Year 1	Year 2	Year 3	Year 4	
Sales receipts		X	X	X		
Costs	—	<u>(X)</u>	<u>(X)</u>	<u>(X)</u>	—	
Sales less Costs		X	X	X		
Taxation		(X)	(X)	(X)	(X)	
Capital	(X)					
Scrap value				X		
Working capital	(X)			X		
Tax saved –						
Tax allowances	—	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	
	(X)	X	X	X	(X)	
Discount factors @						
Cost of capital (WACC)	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	NPV is the sum of present values
Present value	<u>(X)</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>(X)</u>	

The IRR (internal rate of return) method calculates the rate of return at which the NPV is zero.

- 1 Calculate net present value using rate for cost of capital which
 - a Is whole number
 - b May give NPV close to zero ($2/3 - 3/4$ accounting return on investment)
- 2 Calculate second NPV using a different rate
 - a If first NPV is positive, use second rate greater than first rate
 - b If first NPV is negative, use second rate less than first rate
- 3 Use two NPV values to calculate IRR

$$\text{IRR} = A + \frac{N_A}{N_A - N_B} (B - A)$$

Where:

- A is lower of two rates of return used
- B is higher of two rates of return used
- N_A is NPV obtained using rate A
- N_B is NPV obtained using rate B

When N_B is a negative value, remember that $N_A - (-N_B) = N_A + N_B$

NPV

- Simpler to calculate
- Better for ranking mutually exclusive projects
- Easy to incorporate different discount rates
- NPV = expected increase in shareholder value

IRR

- More easily understood
- Can be confused with ROCE
- Ignores relative size of investments
- May be several IRRs if cash flows not conventional

Discounted payback

- Similar to payback method
- Key difference is the use of discounted cash flow to calculate payback period

Investment appraisal in practice

- Most companies use payback method due to uncertainty of future cash flows and recurring pattern of flows over time
- ROCE method often used as it reflects importance of rate of return on capital
- IRR method preferred to NPV
- NPV method seen as too long-term and unable to incorporate all relevant factors

Expressed in terms of the value of the \$ at time 0

Real cash flows

Real discount rate

➔ The return required if there were no inflation

discount at

Expressed in terms of the actual amounts of money received in the future

Money cash flows
(nominal)

Money discount rate
(nominal)

➔ The return required given that inflation will occur

If various costs and benefits do not rise in line with the general level of inflation, apply the money rate to inflated values to determine an NPV.

Learn how the two rates are linked!

$$(1 + \text{money rate}) = (1 + \text{real rate}) \times (1 + \text{inflation rate})$$

Taxation

- A relevant cash flow

Tax and DCF

- Ignore tax, use pre-tax rate of return; or
- Include tax, use post-tax rate of return

Timing: usual assumption is tax payable one year in arrears.

Example

If a project increases taxable profits by \$5,000 in year 4, there will be tax payments of $\$5,000 \times 16.5\% = \825 (assuming a tax rate of 16.5%).

Net cash flows from a project should be considered as the taxable profits arising from a project (unless given an indication to the contrary).

Capital expenditure gives rise to tax-allowable depreciation.

Tax-allowable depreciation (capital allowances)

Capital allowances reduce taxable profits and hence the tax payable. Capital allowances may be called tax allowable depreciation

The rate at which capital allowances are given will always be provided in the question but it is likely to be 25% on a reducing balance basis.

The reduction in tax payable (to be included in any DCF analysis) = amount of capital allowances \times tax rate.

Timing

- (i) the first claim occurs at the start of the project (at year 0) *or*
- (ii) the first claim occurs at the end of the first year.

Example

A company purchases a machine costing \$80,000. The rate of corporation tax is 16.5% and capital allowances are given on a 25% reducing balance basis.

In year 2, capital allowance = $(\$80,000 \times 75\%) \times 25\% = \$15,000$

Tax saved = $\$15,000 \times 16.5\% = \$2,475$

Balancing allowances/charges

When plant is sold there will be a difference between the sales price and the reducing balance amount at the time of sale.

Sales price > reducing balance

→ **taxable profit (balancing charge)**

Sales price < reducing balance

→ **tax allowable loss (balancing allowance)**

Example

A machine has a written down value at the start of year 4 of \$15,000. The corporation tax rate is 16.5%.

- If it is sold for \$10,000, there is a balancing allowance of \$5,000 which is set against year 4 taxable profits, resulting in a reduction in tax paid of $\$5,000 \times 16.5\% = \825 .
- If it is sold for \$20,000, the balancing charge of \$5,000 will be included in year 4 taxable profits, and tax paid will increase by \$825.

The balancing allowance/charge should be dealt with in the year of sale.

Taxation and DCF appraisal

- 1 Calculate **tax-allowable depreciation** (capital allowances) and any **balancing allowance/charge**.
- 2 Based on the capital allowances and balancing allowance/charge calculated above, work out the **tax savings** (tax rate \times capital allowance) and **tax increase** (tax rate \times charge).
- 3 Calculate the **extra tax payable due to savings** related to the project (saving \times tax rate).
- 4 Calculate the **tax savings due to non-capital costs** related to the project (cost \times tax rate).
- 5 Determine the project's **NPV**, including in the calculation capital cash flows, costs and savings related to the project, taxes on savings and any balancing charge and tax saved on capital allowances, any balancing allowances and project costs.

Sensitivity analysis

assesses how responsive a project's NPV is to changes in the variables used to calculate the NPV.

Assess effect of changes in selling price, sales volume, cost of capital, costs and benefits.

Weaknesses

- Only considers one variable at a time
- Changes in variables often interdependent
- Takes no account of probabilities
- Critical factors possibly not controllable
- Doesn't provide decision rule

Risk is where there are several possible outcomes, and probabilities can be assigned to outcomes on the basis of past experience.

Uncertainty is where no probabilities can be assigned.

Risk reduction methods

- Maximum payback period
- Risk adjusted discounting rate
- Selection of projects with low standard deviation and acceptable predicted outcomes
- Attention directed to critical factors
- Use prudence/pessimistic estimates
- Certainty equivalents (convert cash flows to risk-free amounts)
- Simulation

Probability analysis and long-term decisions

Instead of using point estimates or 'most likely' figures, full probability distributions of expected cash flows can be drawn up.

It is then possible to calculate EVs of variables and incorporate them into one NPV calculation. Otherwise, calculate a number of NPVs using each of the options provided in the probability distribution and then calculate an EV of the NPVs.

Standard deviation of the NPV

Avoids complicated EV calculations.

EV of payback

In the same way as EV of NPV is calculated, you can use EV with payback.

Problems with EV

- One-offs
- Subjective probabilities
- Don't cover full range of NPVs.

Real options – the opportunity but not the obligation to undertake an action in the future.

Options

- Postpone (wait-to-invest)
- Expand (growth)
- Switch (flexibility)
- Abandon (exit)

Useful when

- Contingent investment decision
- Significant uncertainty
- Flexibility is important
- Project updates/mid-course strategy changes are expected

Capital rationing

is where a company has a limited amount of money to invest and investments have to be compared in order to allocate money most effectively.

Relaxation of capital constraints

- Joint ventures
- Licensing/franchising
- Contracting out
- Other sources of finance

Soft capital rationing Internal factors

- Reluctance to cede control
- Wish to use only retained earnings
- Reluctance to dilute EPS
- Reluctance to pay more interest
- Capital expenditure budgets

Hard capital rationing External factors

- Depressed stock market
- Restrictions on bank lending
- Conservative lending policies
- Issue costs

Profitability index (PI)

$$PI = \frac{PV \text{ cash inflows}}{PV \text{ initial investment}}$$

Rank projects according to PI

Assumptions of PI method

- Opportunity to undertake project lost if not taken during capital rationing period
- Compare uncertainty about project outcomes
- Projects are divisible
- Ignore strategic value
- Ignore cash flow patterns
- Ignore project sizes

Single period rationing with indivisible projects

- If projects are not divisible, PI method may not give optimal solution
- Unused capital

Use trial and error and test NPV available from different combinations of projects.

Post-completion audit

A post-completion audit (PCA) measures the success of the project by comparing actual cashflows with projections. It is also used as feedback for future projects.

Main features

- A PCA should be performed to identify the performance of projects as well as to motivate managers.
- A PCA could be carried out on any project but it is usual to consider the costs and benefits of doing so on smaller projects.
- A PCA should be carried out when sufficient information is available to make a decision (e.g. when the project has stabilised), ideally by an independent person.

13: Cost of capital

Topic List

Aspects of cost of capital

Cost of equity capital

Risk and the CAPM

The CAPM formula

Cost of debt capital

WACC

In this chapter we look at the calculation of the cost of each source of capital that a company has (debt/equity) and bring them all together into a weighted average cost of capital (WACC).

Aspects of
cost of capital

Cost of
equity capital

Risk and the
CAPM

The CAPM
formula

Cost of
debt capital

WACC

Elements of cost of capital

Risk-free rate of return	Return required from a completely risk free investment e.g. yield on government securities
Business risk premium	Increase in required rate of return due to uncertainty about future and business prospects
Financial risk premium	Danger of high debt levels, variability of equity returns

Private companies

No market values available.

- Use cost of capital for similar public companies, adding premiums for business and financial risk
- Take risk-free rate of return and add premiums for business and financial risk

Marginal cost of capital approach

- Establish rates of return for each component of capital structure
- Relate dividends/interest to these values
- Apply marginal cost to each component depending on its proportionate weight

Cost of capital if constant dividends paid

$$k_e = \frac{d}{P_0}$$

Where: P_0 is price at time 0

d is dividend

k_e is cost of equity or preference capital

Dividend growth model

$$k_e = \frac{d_0(1+g)}{P_0} + g = \frac{d_1}{P_0} + g$$

Where: d_0 is dividend at time 0

d_1 is dividend at time 1

g is dividend growth rate

Estimating growth rate

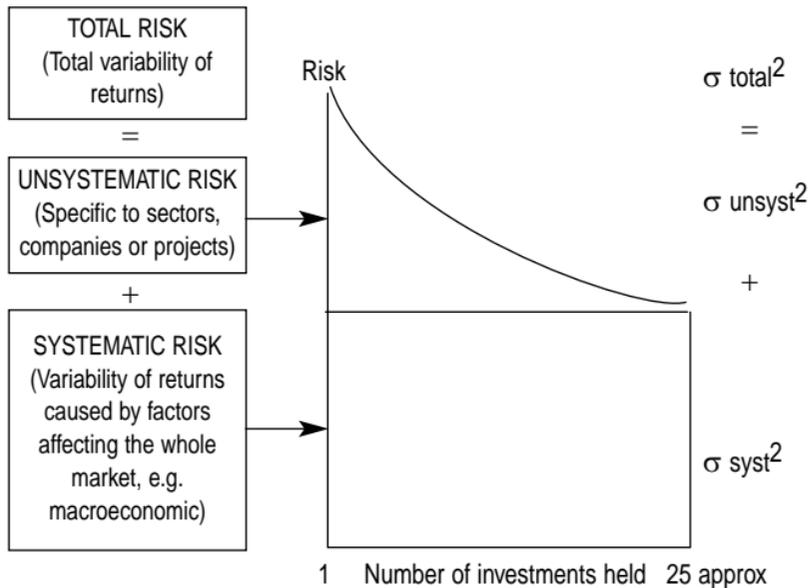
Use experience or formula (Gordon's growth model)

$$g = bR$$

Where: R is accounting return on capital employed

b is proportion of earnings retained

$$g = n \sqrt[n]{\frac{\text{dividend in year } x}{\text{dividend in year } x - n}} - 1$$



Capital asset pricing model

The model is based on a comparison of the systematic risk of individual investments with the risks of all shares in the market.

Assumes:

- Investors/companies require return in excess of risk-free rate
- Unsystematic risk can be diversified away and no premium is required for it
- Investors/companies require a higher return from investments where systematic risk is greater

Model tries to establish share's equilibrium value/cost of equity

The CAPM formula

$$E(r_j) = r_f + (E(r_m) - r_f) \beta_j$$

Where: $E(r_j)$ is cost of equity capital/expected equity return

r_f is risk-free rate of return

$E(r_m)$ is expected return from market

β_j is beta factor of security

Market risk premium

is the extra return required from a share to compensate for its risk compared with average market risk.

Problems with CAPM

Assumptions unrealistic?

- Zero insolvency costs
- Investment market efficient
- Investors hold well-diversified portfolios
- Perfect capital market

Required estimates difficult to make

- Market risk premium
- Risk-free rate (govt. securities' rates vary with lending terms)
- β factors difficult to calculate

Aspects of
cost of capital

Cost of
equity capital

Risk and the
CAPM

The CAPM
formula

Cost of
debt capital

WACC

After tax cost of irredeemable debt capital

$$k_{\text{dnet}} = \frac{i(1-t)}{P_0} \quad \text{Exam formula}$$

Where: k_{dnet} is the after-tax cost of the debt capital

i is the annual interest payment

P_0 is the current market price of the debt capital ex-interest

t is the rate of tax

Year	Item	Cash	DCF	PV
0	Current market value	(X)	1.000	(X)
1-n	Interest less tax ($i(1-t)$)	X	X	X
n	Value of shares on conversion	X	X	<u>X</u>
				<u>X</u>

Cost of redeemable securities

$$P_0 = \frac{i}{(1+k_{\text{dnet}})} + \frac{i}{(1+k_{\text{dnet}})^2} + \dots + \frac{i+P_n}{(1+k_{\text{dnet}})^n}$$

Where: P_n is amount payable on redemption in year n

This equation has to be solved using different discount factors to find the IRR.

Assumptions of WACC

- Project small relative to company and has same business risk as company
- WACC reflects company's long-term future capital structure and costs
- New investments financed by new funds
- Cost of capital reflects marginal cost

$$\text{WACC} = k_e \frac{V_E}{V_E + V_D} + k_d \frac{V_D}{V_E + V_D}$$

k_e is cost of equity
 V_E is market value of equity
 k_d is cost of debt
 V_D is market value of debt

Use market values rather than book values unless market values unavailable (unlisted company)

Problems with WACC

- New investments may have different business risk
- New finance may change capital structure and perceived financial risk
- Cost of floating rate capital not easy to calculate

The cost of capital and NPV of new projects

If a company undertakes a project, and the finance is such that the cost of capital remains unchanged, the market value of shares will increase by the value of the NPV of the project. If markets are efficient, share price increases when details of the project become available (relative proportions of debt and equity must remain unchanged).

Notes

14: Capital structure

Topic List

Gearing

Views on capital structure

Practical aspects

This chapter considers the arguments about whether or not there is an optimal capital structure for a company.

Debt finance – relatively low risk for the debtholder as interest bearing and often secured. The cost of debt to the company is therefore relatively low.

– the greater the level of debt, the more **financial risk** (of reduced dividends after the payment of debt interest) to the shareholder of the company, so the higher is their required return.

Financial risk – measured by:

- gearing ratio
- debt/equity ratio
- debt ratio
- interest coverage

Gearing

Financial gearing

- The relationship between shareholders' funds and prior charge capital
- The more geared the company is, the greater the risk that profits will not cover interest and dividends

Operational gearing

- The relationship between contribution and profit before interest and tax
- High operational gearing implies volatile operating profits

Measures of gearing

- **Financial gearing ratio** = $\frac{\text{Prior charge capital}}{\text{Equity capital (including reserves)}}$ or $\frac{\text{Prior charge capital}}{\text{Total capital employed}}$
or $\frac{\text{Market value of prior charge capital}}{\text{Market value of equity + market value of debt}}$

Where prior charge capital = capital which has a right to the receipt of interest or preferred dividends in precedence to any claim on distributable earnings on the part of the ordinary shareholders.

- **Debt ratio** = total debts:total capital employed
- **Debt/Equity ratio** = total debts:total equity capital (including reserves)
- **Interest cover ratio** – assesses risks in terms of whether there is likely to be sufficient profit to service debt
= $\frac{\text{Operating profit}}{\text{Interest}}$
- **Operational gearing** = $\frac{\text{Fixed costs}}{\text{Total costs}}$ or $\frac{\text{Contribution}}{\text{Operating profit}}$

Impact of gearing on shareholders

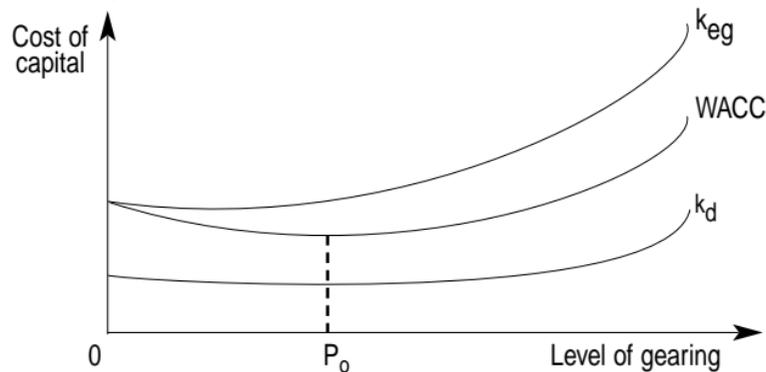
If a company can generate returns on capital in excess of the interest payable on debt, financial gearing will raise the EPS. Gearing will, however, also increase the **variability of returns** for shareholders and increase the chance of corporate **failure**.

- **Financial gearing at a given level of sales** =
$$\frac{\% \text{ change in earnings per share}}{\% \text{ change in profits before interest and tax}}$$
- **Price earnings (P/E) ratio** =
$$\frac{\text{Market price per share}}{\text{Earnings per share}}$$
- **Dividend cover** =
$$\frac{\text{Earnings per share}}{\text{Dividend per share}}$$
- **Dividend yield** =
$$\frac{\text{Gross dividend per share}}{\text{Market price per share}} \times 100\%$$

TRADITIONAL VIEW: Optimal capital structure at point where WACC minimised.

Assumptions

- All earnings paid out as dividends
- Earnings and business risk constant
- No issue costs
- Tax ignored



k_{eg} is the cost of equity in the geared company

k_d is the cost of debt

WACC is the weighted average cost of capital

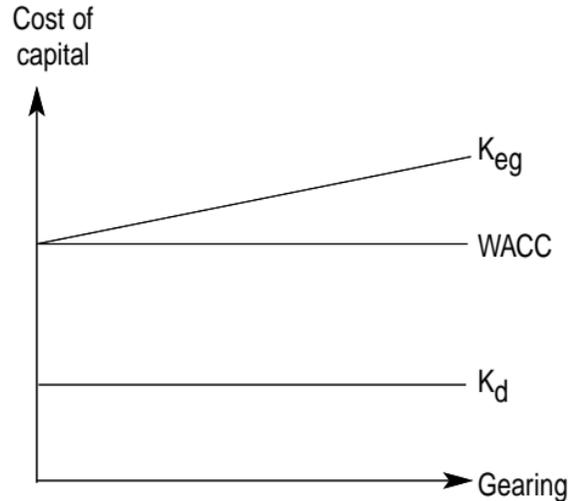
P_0 is the optimal capital structure where WACC is lowest

Modigliani and Miller concluded that the capital structure of a company would have no effect on the overall Weighted Average Cost of Capital.

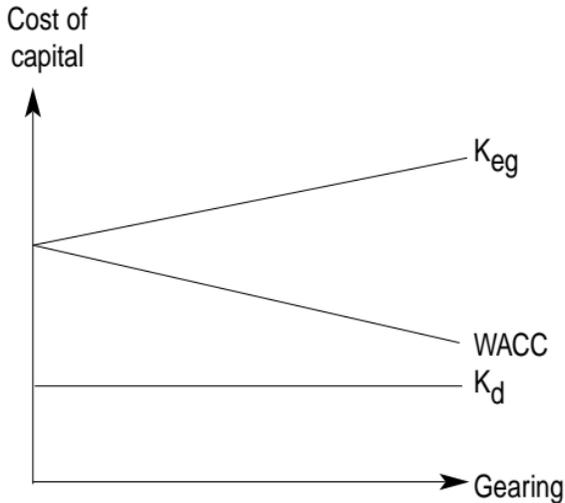
Assumptions made by M&M

- Investors are rational
- Information is freely available
- No transaction costs
- Debt is risk-free
- Investors are indifferent between corporate and personal borrowing
- No tax: M&M argued that cost of equity would rise as gearing rises to offset exactly the benefits of the increasing proportion of lower-cost debt capital.

M&M – ignoring taxation



M&M – with corporate taxation



M&M: impact of tax

- Tax relief on interest payments lowers WACC up to very high gearing levels
- Conclusion: capital structure entirely made up of debt

Problems with M&M

- Bankruptcy costs
- Agency costs
- Tax exhaustion

Pecking order theory

In practice, companies prefer retained earnings, then debt, then equity.

Practical issues

To analyse capital structure and alternative sources of finance, consider:

- Flexibility
- Risk
- Income
- Control
- Timing

15: Regulatory environment

Topic List

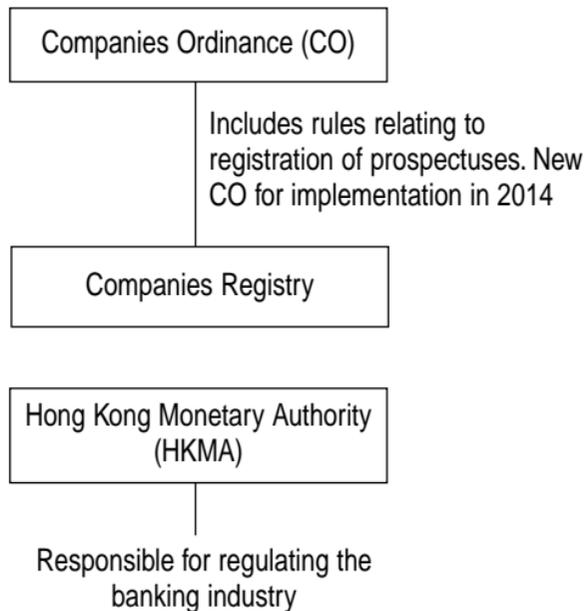
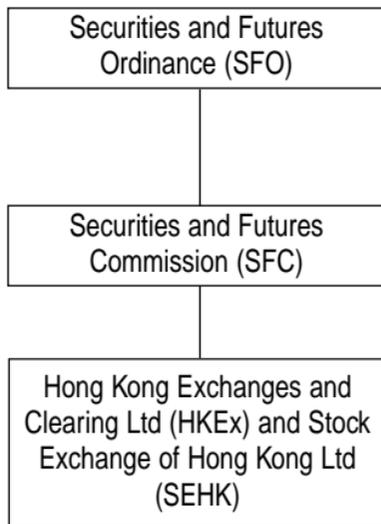
Regulatory environment

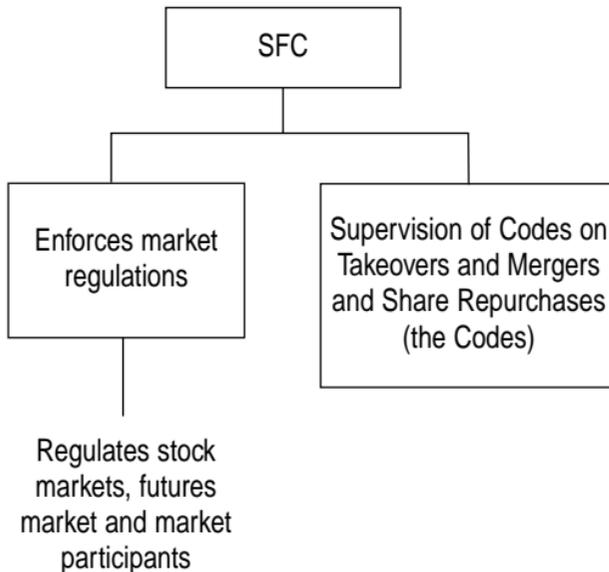
SFC

HKEx

Corporate governance

This chapter focuses on the key aspects of the regulatory environment within which businesses in Hong Kong are required to operate.





Key parts of the SFC regulatory mechanism:

- **Market Misconduct Tribunal**
(deals with market misconduct, including insider dealing, market rigging, etc)
- **Takeovers and Mergers Panel**
(reviews takeover rulings)
- **Takeovers Appeals Committee**
(reviews disciplinary rulings of the Takeovers and Mergers Panel)

Securities and Futures Commission (SFC)

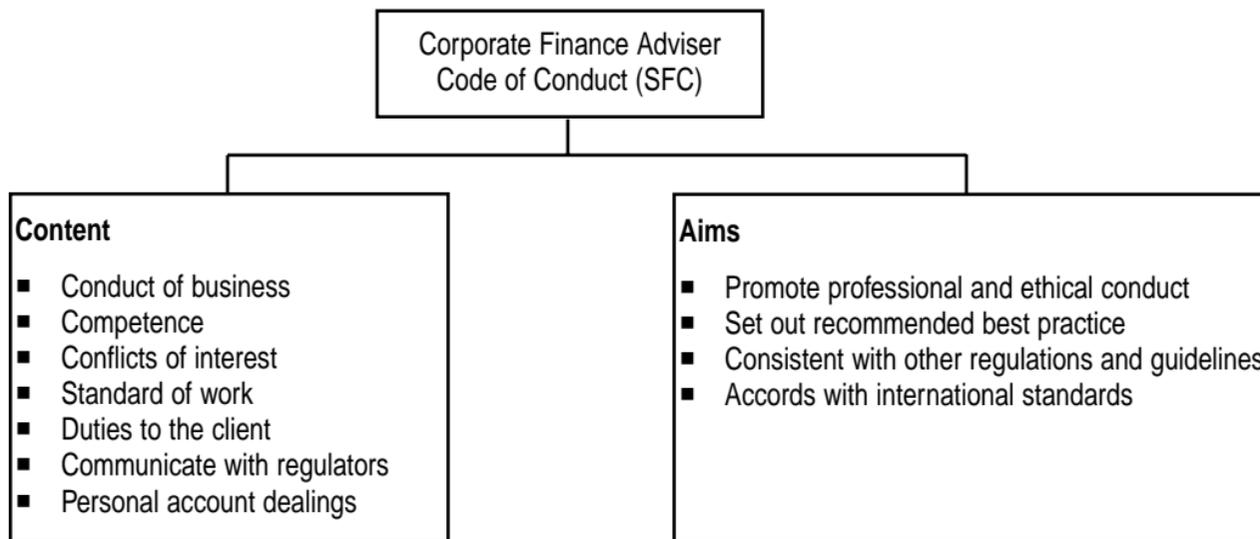
- Regulator of market intermediaries and their conduct
- Supervisor of the exchanges and clearing houses in all aspects of their operation
- Statutory enforcer



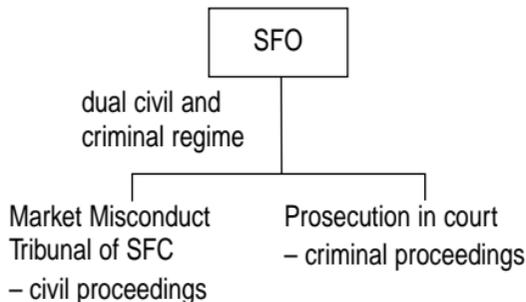
- **Corporate Finance Division** (regulates corporate finance activities)
- **Enforcement Division** (conducts market surveillance to identify improper or illegal activities)
- **Intermediaries and Investment Products Division** (regulates and supervises financial intermediaries and products)

Code of Conduct for Corporate Finance Advisers (issued by the SFC) covers all persons advising on corporate finance matters and sets out the rules and guidelines in respect of the conduct of corporate finance advisers.

The Securities and Futures Commission (SFC) seeks to promote professional and ethical business conduct among corporate financial advisers in Hong Kong, via the Corporate Finance Adviser Code of Conduct.



Insider dealing



Takeovers Code

Person with confidential price-sensitive information about a takeover must not deal in shares of the target company (until the bid is announced)

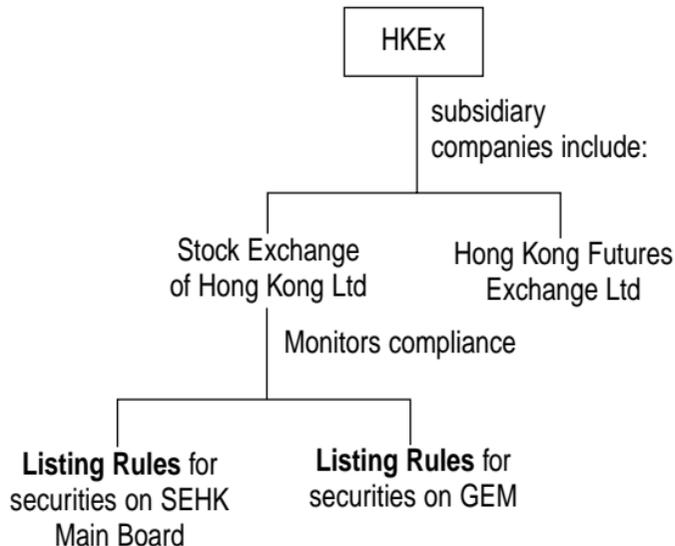
Model Code

– part of Listing Rules
 – minimum standard of behaviour for directors: good practice for dealing in shares of their company

Insider dealing (an offence or misconduct) occurs when:

- a person *connected* with a listed company (such as director, employee, advisor substantial shareholder)
- had *relevant information* (which is not yet known to the public and is likely to affect the share price when made public)
- and *deals* in shares of the company or counsels/procures someone else to deal

An inside dealer can claim an exception to the rule as a defence, but has to prove his claim.



Reasons for listing

- Access to capital
- Better credit status, so better access to credit
- Broad shareholder base plus trading on HKEx improves liquidity of shares
- Employee incentives: share and option award schemes
- Higher corporate profile: benefits of greater transparency

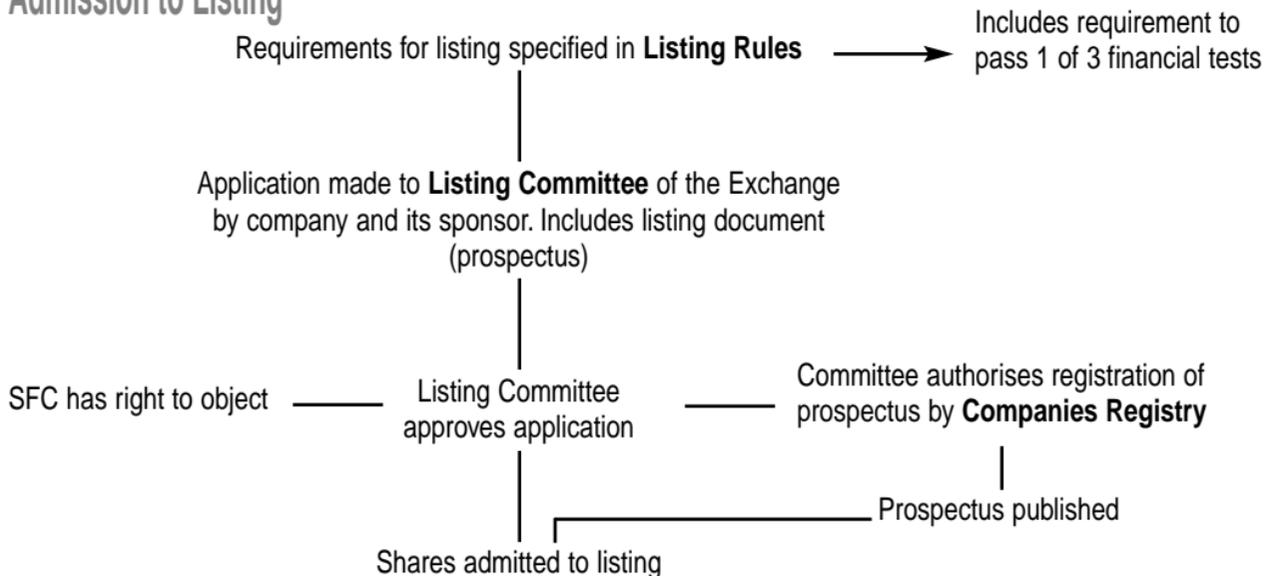
The principal function of the **Exchange (SEHK)** is to provide a fair, orderly and efficient market for the trading of securities.

Corporate Governance Code sets out the SEHK's views on the principles of good corporate governance.

Listing Rules set out the requirements for the listing of securities on HKEx main board and GEM; designed to ensure:

- (a) Investors have and can maintain confidence in the marketplace
- (b) Applicants are suitable for listing
- (c) The issue and marketing of securities is conducted in a fair and orderly manner
- (d) Investors are given sufficient information to enable them to make a properly informed assessment of an issuer
- (e) Investors are kept fully informed by listed issuers
- (f) Immediate disclosure is made of any information that might reasonably be expected to have a material effect on market activity in, and the prices of, listed securities
- (g) All holders of securities are treated fairly and equally
- (h) Directors of a listed issuer act in the interests of its shareholders as a whole, particularly where the public represents only a minority of the shareholders
- (i) All new issues of equity securities by a listed issuer are first offered to the existing shareholders by way of rights unless they have agreed otherwise

Admission to Listing



Corporate governance

is the system by which companies are directed and controlled; it influences the way a company deals with its stakeholders

Main aspects of corporate governance

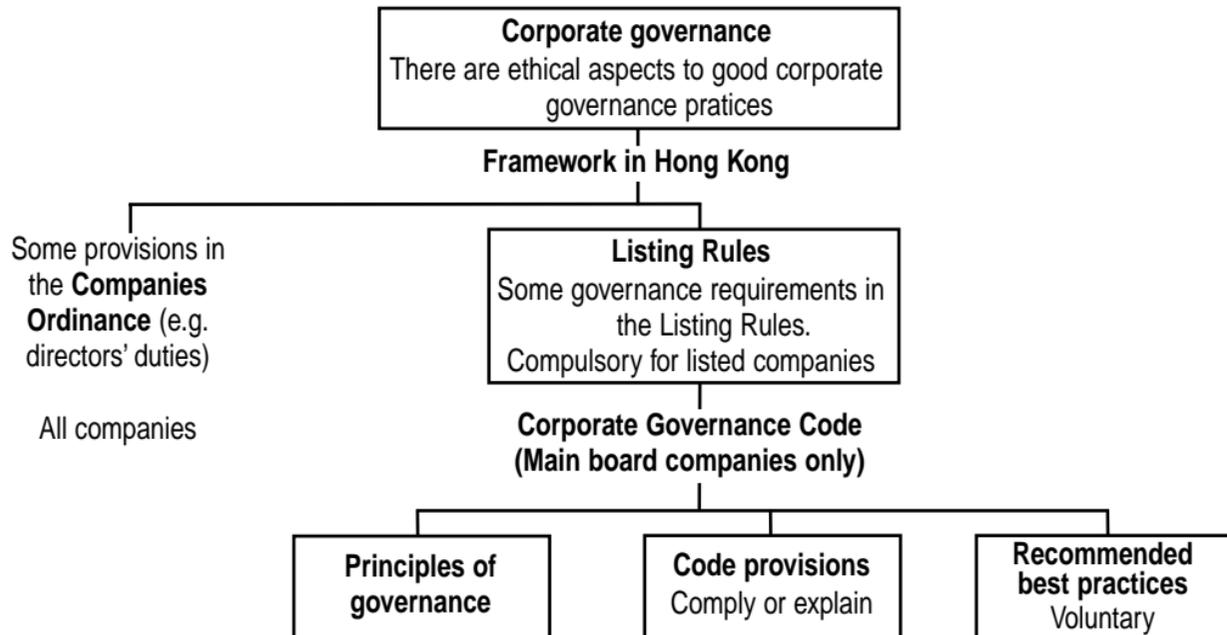
- How the board of directors should act in the interests of the company's stakeholders, particularly its equity shareholders
- The structure and composition of the board of directors: how large should the board be and who should be its directors?
- How to deal with directors' conflicts of interests, for example with regard to directors' remuneration
- The rights of shareholders to influence decisions or make decisions for the company
- The accountability of the board of directors to shareholders, and the audit of financial statements (as an important factor in accountability)
- How risk management policies are decided by the board of directors, to prevent excessive risk-taking by the company in its operations
- The relations between the board of directors and the shareholders.

Poor corporate governance

- Domination by single individual
- Lack of board involvement
- Lack of internal controls/audit
- Poor supervision
- No independent scrutiny
- Little contact with shareholders
- Short-term profits all important
- Misleading accounts

Governance principles

- Adhere to strategic objectives
- Minimise risk
- Promote integrity
- Fulfil responsibilities to stakeholders
- Establish accountability
- Maintain auditor/non-executive independence
- Report accurately and promptly
- Encourage shareholder involvement



Source of rule or guidance	Compulsory or voluntary for listed companies?
Listing Rules	Listing Rules are compulsory requirements
Corporate Governance Code <ul style="list-style-type: none"> – Appendix to the Listing Rules Code Contains: <ul style="list-style-type: none"> – Code provisions – Recommended Best Practices (RPBs) 	<p>Provisions should usually be applied (complied with). Any non-compliance must be explained in the annual report.</p> <p>RPBs are guidance only. Compliance is desirable but not compulsory. Non-compliance need not be explained in the annual report.</p>

Aspects of governance covered by Listing Rules or CG Code	Examples of Rules, Code provisions
Directors	<ul style="list-style-type: none">■ Separation of chairman and CEO■ At least one-third of board to be independent non-executive directors
Remuneration	<ul style="list-style-type: none">■ Companies must have a remuneration committee of the board with majority of independent NEDS
Accountability and audit	<ul style="list-style-type: none">■ Auditors cannot be removed from office before AGM without shareholder approval in general meeting
Delegation by board	<ul style="list-style-type: none">■ Directors may delegate authority but remain responsible■ Directors must take an active interest in the company's affairs.
Communication with shareholders	<ul style="list-style-type: none">■ Annual report should include discussion of company's business model (how it creates value) and its strategy for delivery of objectives

16: Financial markets

Topic List

Financial intermediation

Money and capital markets

International capital markets

Financial environment for Hong Kong businesses

Efficient market hypothesis

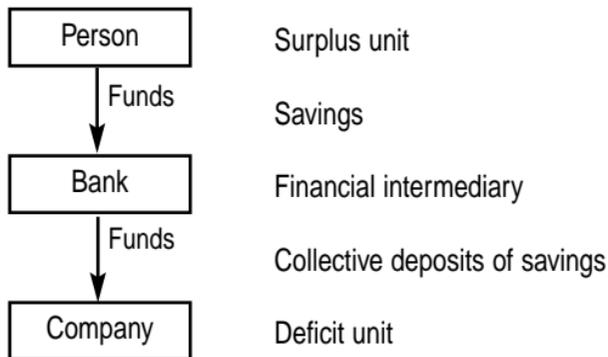
Current trends

This chapter considers the framework of markets and institutions through which the financing of a business takes place.

Financial intermediation

is the bringing together of providers and users of finance.

- Convenient means of saving money
- Aggregating of amounts lent for borrowing
- Pooling reduces risk
- Maturity transformation



Types of intermediary

- Commercial banks
- Merchant banks
- Finance companies
- Insurance companies
- Pension funds
- Unit trusts
- Investment trusts

Money markets

are operated by banks/financial institutions and provide means of lending and borrowing in the **short term**.

- Primary or official
- Interbank
- Eurocurrency
- Certificate of deposit
- Commercial paper
- Finance house
- Inter-company

Capital markets

are markets for trading in **long-term** financial instruments, equities and debentures. They enable organisations to raise new finance, investors to realise investments and companies to merge/takeover.

- HKEx main market
- GEM

Primary market

- companies can raise new finance by issuing new shares

Secondary market

- investors can buy/sell existing shares

International money markets

are markets for short- and medium-term funds, as distinct from international capital markets.

Eurocurrency markets

Deposit of funds with bank outside the country of origin of funds and re-lending for short term (three months).

Eurocurrency loans

Hong Kong company borrowing foreign currency from Hong Kong bank.

International capital markets

are markets that allow companies to issue long-term bonds or paper to borrow directly from investors.

Euromarkets v domestic markets

- Borrowing – lending spreads closer on Euromarket
- Euromarket loans don't normally need security
- Interest paid gross on Euromarkets
- Easier to raise large sums on Euromarkets

Banking structure in HK

- Hong Kong Monetary Authority (HKMA)
- Exchange fund and reserves management
- Linked exchange rate system
- Debt market development
- Real Time Gross Settlement System
- Payment-versus-Payment system
- Hong Kong Mortgage Corporation
- Banking policy and supervision
- Hong Kong monetary system 'one country, two systems'
- Role of Hong Kong as international financial centre

HK financial markets

- Stock market (equity)
- Debt market
- Foreign exchange market
- Derivatives market
- (Hedge funds)

Other influences

- Chinese mainland banking environment
- International Monetary Fund (IMF)
- World Bank

Fundamental theory of share values

states that the value of a share will be the discounted present value of future expected dividends, discounted at shareholders' cost of capital.

In practice share prices are affected by day to day fluctuations reflecting:

- Supply and demand in particular period
- Investor confidence
- Market interest rate movements

Other 'irrational' reasons for movements include:

- Overreaction to recent events
- Neglect of individual shares/types of company

Technical analysts or chartists

They work on the assumption that past price patterns will be repeated.

Analysis is based on trend reversal, certain signal points to buy or sell.

Random walks

This theory is consistent with fundamental theory, based on the idea of intrinsic value which alters as new information becomes available.

Efficient market hypothesis

is the hypothesis that stock market reacts immediately to all available information. An investor cannot obtain higher than average returns from well-diversified portfolio.

- Price of securities bought and sold reflects all relevant information
- No individual dominates market
- Transaction costs do not discourage trading
- Investors are rational
- Costs of information acquisition are insignificant

Weak form efficiency

Prices reflect all relevant information about past price movements and their implications

Semi strong form efficiency

Prices reflect:

- past price information
- publicly available knowledge

Strong form efficiency

Prices reflect:

- past price changes
- public knowledge
- inside knowledge

Basel rules

Internationally-agreed rules for banks, to make the banking system stable

Basel II and Basel III

Rules for

- Minimum capital requirements for banks
- Minimum liquidity requirements
- Supervision of banks



Will reduce return on equity for banks.

Many banks also have weak balance sheets (insufficient bad debt provisions).

Implications:

- Banks will be more reluctant to lend.
- Companies may therefore find it difficult to obtain finance from banks

Dodd-Frank Act 2010

Extensive reform of banking and the financial services industry in the USA

- New oversight structure for financial institutions
- New restrictions on products
- More stringent regulatory capital requirements

Implementation period likely to be lengthy.

Act aims to transfer dealing in standard derivatives (swaps) on to formal derivatives exchanges.



Exchange based trading rather than OTC deals should reduce financial risks for the banking system.

Implications:

- Eventually companies may arrange more derivative transactions through an exchange rather than OTC

17: Business valuations

Topic List

Asset valuation

Dividend valuation

Earnings valuation

Discounted cash flow valuation

Comparables method

Valuation of debt

Business valuations may be required for a quoted company where there is a takeover bid. A valuation may also be required for an unquoted company if it is to be listed, sold or used as collateral. This chapter looks at the main methods of valuation.

Asset
valuation

Dividend
valuation

Earnings
valuation

Discounted cash
flow valuation

Comparables
method

Valuation
of debt

Net assets valuation method

$$\text{Value of shares in class} = \frac{\text{Net assets attributable to class}}{\text{No of shares in class}}$$

Possible bases of valuation



Historical
basis
(unlikely to
be realistic)



Replacement
basis
(asset used
on ongoing
basis)



Realisable
basis
(asset sold/
business
broken up)

Uses of net assets valuation method

- As measure of security in a share valuation
- As measure of comparison in scheme of merger
- As floor value in business that is up for sale

Problems in valuation

- Need for professional valuation
- Realisation of assets
- Contingent liabilities
- Market for assets
- Valuation of intangibles

Dividend valuation model

$$P_0 = \frac{D}{K_e}$$

Where: P_0 is price at time 0
 D is dividend (constant)
 K_e is cost of equity

$$P_0 = \frac{D_1}{K_e - g}$$

Where: D_1 is dividend in year 1
 g is dividend growth rate

Assumptions

- Dividends from new projects of same risk type as existing operations
- No increase in cost of capital
- Perfect information
- Shareholders have same marginal capital cost
- Ignore tax and issue expenses

Problems

- Companies that don't pay dividends don't have zero values
- Need enough profitable projects to maintain dividends
- Dividend policy likely to change on takeover

Asset
valuation

Dividend
valuation

Earnings
valuation

Discounted cash
flow valuation

Comparables
method

Valuation
of debt

Price-earnings ratio

$$\text{P/E ratio} = \frac{\text{Market value}}{\text{EPS}}$$

$$\therefore \text{Market value} = \text{EPS} \times \text{P/E ratio}$$

Usually used to value controlling interests. Have to decide suitable P/E ratio.

Factors to consider:

- Industry
- Status
- Marketability
- Shareholders
- Asset backing and liquidity
- Nature of assets
- Gearing

- Applying listed P/E to unlisted company
- Difference in capital structure

Earnings yield – a variation on the P/E method

$$\text{Earnings yield (EY)} = \frac{\text{EPS} \times 100\%}{\text{Market price per share}}$$

$$\text{Market value} = \frac{\text{Earnings}}{\text{EY}}$$

Problems in valuation

- Historical P/E may not reflect future prospects
- Single P/E ratio may be distorted, e.g. if earnings volatile

Discounted cash flow method

Value investment using expected after tax cash flows and appropriate cost of capital.

Free cash flow to the firm (FCFF)

= cash flow that is available to pay interest/principal to lender + dividends to shareholders

$$\text{FCFF} = \text{EBIT} (1 - T) + \text{Depreciation} + \text{Amortisation} - \text{Capital expenditure} \pm \text{changes in net working capital}$$

Constant growth

$$V_0 = \frac{\text{FCFF}_{t1}}{\text{WACC} - g}$$

Two stage growth

$$V_0 = \sum_{t=1}^n \frac{\text{FCFF}_t}{(1 + \text{WACC})^t} + \left[\frac{\text{FCFF}_{n+1}}{\text{WACC} - g^*} \right] / (1 + \text{WACC})^n$$

Where:	V_0	= value of firm
	FCFF_t	= Free cash flow in year t
	WACC	= Weighted average cost of capital
	g	= growth rate in FCFF_t
	g^*	= long run growth rate (two stage model)
	n	= number of years of high growth (two stage model)

Asset
valuation

Dividend
valuation

Earnings
valuation

Discounted cash
flow valuation

Comparables
method

Valuation
of debt

Equity share value = Value of firm based on FCFF – Net debt

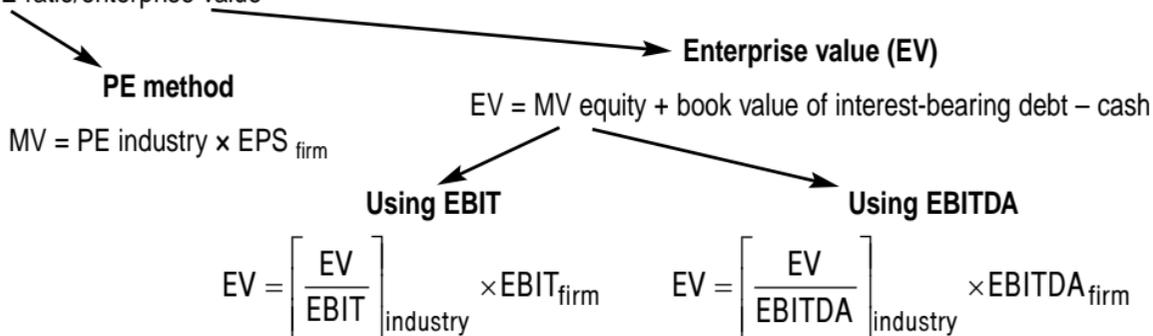
Where: Net debt = interest bearing debt *less* cash

Problems in valuation

- Estimating future cash flows
- Estimating future growth rate(s)
- Estimating discount rate

Comparables method

uses data on comparable firms. Many industries have well-recognised benchmarks,
e.g. PE ratio/enterprise value



Industry ratio – based on average of similar companies (comparable growth, risk, gearing, dividend payout)

Trailing basis – use current EPS/EBIT/EBITDA

Forward basis – use expected (next year's) EPS/EBIT/EBITDA

Where total firm valued, subtract value of debt/preference shares to value equity only.

Asset
valuation

Dividend
valuation

Earnings
valuation

Discounted cash
flow valuation

Comparables
method

Valuation
of debt

Valuation of debt

Irredeemable

$$P_0 = \frac{i}{k_d} = \frac{i(1-t)}{k_{dnet}}$$

Convertible debt

$$P_0 = \text{PV of interest} + \text{PV of conversion value}$$

Where:

$$\text{Conversion value} = P_0(1+g)^n R$$

Preference shares

$$P_0 = \frac{d}{k_{pref}}$$

Redeemable

$$P_0 = \text{Annual interest} \times \text{Annuity factor for time periods 1 to } n$$

Plus Redemption value at time period $n \times$ Discount factor for period n

18: Mergers and acquisitions

Topic List

Mergers and acquisitions

Synergies

Due diligence

Regulation

Defence tactics

Payment methods

Assessing an offer

In this chapter we look at the reasons behind mergers and acquisitions, how they are carried out and the ways in which they are regulated.

Organic growth

The development of internal resources

- Supports **learning** and is supported by it
- Consistent culture and management style
- Provides economies of scale
- Ease of control

However:

- Can be slow
- Not good for dealing with barriers to entry

Cooperative methods

Include consortia, **joint ventures**, **licensing**, **franchising** and **sub-contracting**. These methods can enhance access to resources of all kinds, achieve economies of scale, achieve synergy, and enhance competences but stop short of a merger or takeover.

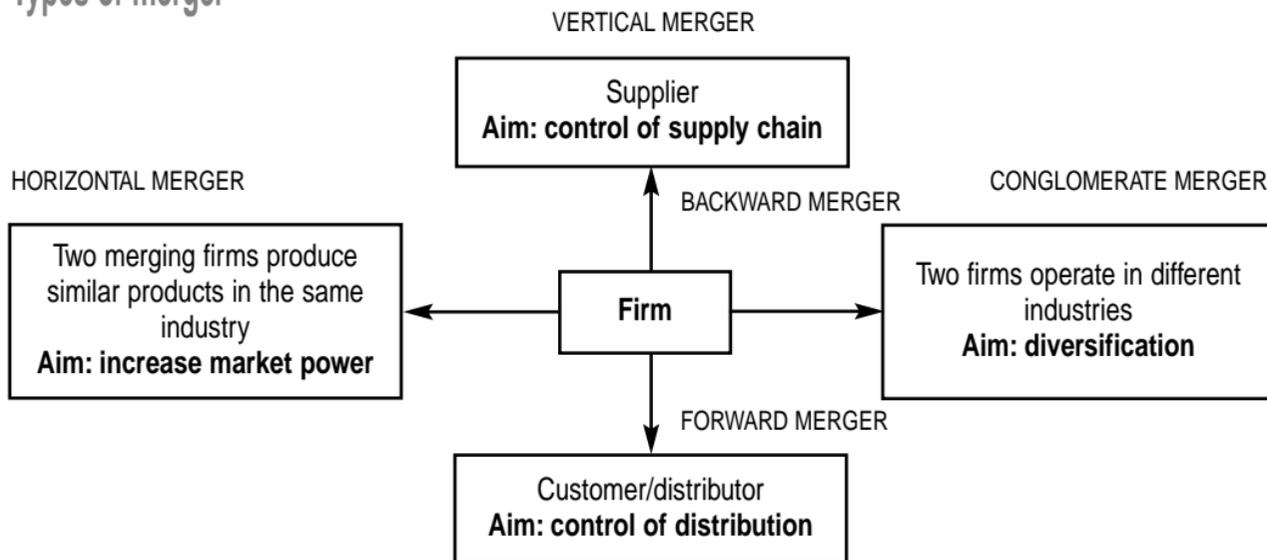
Mergers and acquisitions

- Can overcome barriers to entry
- Can spread risk
- Can defend against predators
- Provide access to a variety of resources: products; managers; suppliers; production facilities; technology and skills; distribution facilities; cash; tax losses

However, many acquisitions fail to enhance shareholder value.

- Cost: the acquisition price is often too high
- Customers may be disturbed by changes
- Cultural problems, especially in management
- Top management egos can warp judgement
- Professional advisers drive the market

Types of merger



Mergers and acquisitions

Synergies

Due diligence

Regulation

Defence tactics

Operating economies

Management of acquisition

Diversification

Asset backing

Earnings quality

Mergers and acquisitions

Finance/
liquidity

Internal expansion costs

Tax

Defensive merger

Economic efficiency

Factors in a takeover

- Cost of acquisition
- Reaction of predator's shareholders
- Reaction of target's shareholders
- Impact on risk
- Form of purchase consideration
- Accounting implications
- Future policy (e.g. dividends, staff)

Revenue synergy

– acquisition increases revenues, returns on equity *or* longer period of growth

- Sources:
- increased market power
 - marketing synergies
 - strategic synergies

SYNERGIES

Financial synergy

- Sources:
- Diversification
 - Cash slack
 - Tax benefits
 - Debt capacity

Cost synergies

– reduced costs lead to increased margins

Sources: economies of scale

Mergers and acquisitions

Synergies

Due diligence

Regulation

Defence tactics

Commercial due diligence

- Top down analysis
- Understanding the stage of the organisation in its lifecycle
- The link with strategy
- Strategic analysis, including SWOT and Porter's Five Forces
- The changing environment: environmental, social and political risks

Financial due diligence

- The statement of financial position
- Contingencies, capital commitments, leases etc
- Intangibles - measuring and managing IP, brands, goodwill etc
- Forecasts - identifying variables most at risk

DUE DILIGENCE - investigation into a potential investment, on behalf of the investors

Legal due diligence

- Getting the corporate legal structure right
- Understanding legal documents, such as sales and purchase agreements
- The legal environment: Takeover Code, Employment law etc
- Tax implications: capital gains, assessed losses etc

Adequacy of due diligence

- Suspicions that due diligence by sponsoring firms is not always as rigorous as it should be.
- SFC proposal (2012) for a change in the law.
- Recommended that sponsor firms have both criminal and civil liability for defective prospectuses.

General aims of regulation

- protection of non-controlling interest and other stakeholders (in HK listed companies)
- prevent management acting against stakeholder interests
- ensure a well-functioning market

Hong Kong specific regulation

Takeovers Code and Share Repurchase Code

(issued by SFC in conjunction with Takeovers Panel) set out agreed standards of commercial conduct:

Applies to:

- offers for all relevant companies
- takeovers and mergers of all relevant companies
- all transactions, including share repurchases by general offer

Sets out ten (non-statutory) general principles

Key aspects of takeover regulation

- mandatory-bid rule (if a person acquires more than 30% of shares)
- principle of equal treatment
- transparency of ownership and control
- squeeze-out and sell-out rights
- one share-one vote principle
- break-through rule
- board neutrality and anti-takeover measures

Four primary objectives of Codes:

- (a) Ensure equality of treatment for shareholders affected by takeovers, mergers and share repurchases
- (b) Ensure provision of adequate information to enable shareholders to make an informed decision on a potential offer
- (c) Ensure there is a fair and informed market in the shares of companies affected by takeovers, mergers and share repurchases
- (d) Provide a framework within which takeovers, mergers and share repurchases are conducted

Mergers and acquisitions

Synergies

Due diligence

Regulation

Defence tactics

Listing Rules require compliance with

Takeovers Code

Applies when target company is a public company in Hong Kong or a company with a primary listing in Hong Kong

10 General Principles and rules of conduct (including mandatory offer required from anyone acquiring more than 30% of shares)

Administered by
Executive

(**Executive Director** of Finance Division of SFC)

Takeovers and Mergers Panel

Committee of SFC may be asked to review decisions by the Executive. Also deals with disciplinary cases for breach of the Code

Tactic	Explanation
Golden parachute	Large compensation payments made to top management of target firm if their positions are eliminated due to hostile takeover. May include cash or bonus payments, stock options or a combination
Poison pill	Attempt to make a company unattractive, normally by giving the right to existing shareholders to buy shares at a very low price
White knights and white squires	Inviting a firm to rescue the target from the unwanted bidder. The white knight would act as a friendly counter-bidder. A white squire is similar but does not take control of the target firm
Crown jewels	Selling the firm's most valuable assets or entering into arrangements such as sale and leaseback, to make it a less attractive target
Pacman defence	Mount a counter-bid for the attacker (an aggressive rather than defensive tactic)
Litigation or regulatory defence	Challenge the acquisition by inviting an investigation by the regulatory authorities or through the courts. May be able to sue for a temporary order to stop the predator from buying any more of its shares

Purchase consideration



Cash purchases



Share exchange



Convertible loan stock

Choice of offer

Predator's shareholders

- EPS dilution
- Tax allowable interest
- Change in gearing
- Change in effective control

Target's shareholders

- Liability to tax on cash capital gain
- Maintain existing income
- Maintain stake in company
- Want shares to retain value

If cash consideration is used, cash may have to be raised by rights issue or borrowing by medium-term loan or mezzanine finance.



Notes

19: Corporate reorganisation and change

Topic List

Business reorganisation

Management buy-outs and buy-ins

Leveraged buy-outs

In this chapter we consider the various methods of business reorganisations, concentrating on methods of unbundling companies.

Business reorganisation

undertaken when company is in difficulty *or* to enhance value

Portfolio restructuring

- changes in the mix of assets owned by the firm or lines of business in which the firm operates, e.g. acquisition, spin-offs

Organisational restructuring

- changes in the organisational structure of the firm, e.g. divisional or hierarchical structures

Divestment - the partial or complete disposal of a company's assets, to free funds for investment in other areas.

Demerger

is the splitting up of a corporate body into two or more separate bodies, to ensure share prices reflect the true value of underlying operations.

Sell-off

is the sale of part of a company to a third party, generally for cash.

Liquidation

an extreme form of sell-off involving the whole business.

Disadvantages of demergers

- Loss of economies of scale
- Ability to raise extra finance reduced
- Vulnerability to takeover increased

Reasons for sell-offs

- Strategic restructuring
- Sell off loss-making part
- Protect rest of business from takeover
- Cash shortage
- Reduction of business risk
- Sale at profit

Spin-offs

is when a new company is created whose shares are owned by the shareholders of the original company. There is no change in asset ownership, but management may change.

Carve-outs

the creation of a new company by detaching parts of the company and selling the shares of the new company to the public.

Advantages of spin-offs to investors

- Merger or takeover of only part of business made easier
- Improved efficiency/management
- Easier to see value of separate parts
- Investors can adjust shareholdings

Advantages of carve-outs

- Raise funds in capital markets to repay debts or fund expansion
- Carve-out units often highly valued as represent key assets

Management buy-out (MBO)

is the purchase of all or part of a business by its managers.

The managers generally need financial backers (venture capital) who will provide risk capital in return for an equity stake.

Reasons for company agreeing to MBO are similar to those for sell-off, also:

- best offer price available is from MBO
- when group has decided to sell subsidiary, best way of maximising management co-operation
- sale can be arranged quickly
- selling organisation more likely to retain beneficial links with sold segment

Evaluation of MBOs by investors

- Management skills of team
- Reasons why company is being sold
- Projected profits, cash flows and risks
- Shares/selected assets being bought
- Price right?
- Financial contribution by management team
- Exit routes (flotation, share repurchase)

Financial arrangements

Buy-out team – minority of equity

Financial backers – majority of equity

Venture capitalists require shareholding, right to appoint some directors and right of veto on certain business decisions. They may also take convertible preference shares.

Performance of MBOs

Generally better than previous situation. Reasons:

- Favourable price
- Personal motivation
- Quicker decision-making/flexibility
- Savings on overheads

Buy-ins

are when a team of outside managers mount a takeover bid and then run the business themselves.

Problems with MBOs

- Lack of financial experience
- Tax and legal complications
- Changing work practices
- Inadequate cash flow
- Board representation by finance suppliers
- Loss of employees/suppliers/customers

Buy-ins often occur when a business is in trouble or shareholder/managers wish to retire. Finance sources are similar to buy-outs. They work best if management quality improves, but external managers may face opposition from employees.

Leveraged buy-out (LBO)

A publicly listed company is acquired by a specialist established private company. The private company funds the acquisition by substantial borrowing.

Going private

occurs when a small group of individuals, possibly including existing shareholders and management, buy all the company's shares. The company ceases to be listed on a stock exchange and shares may thus lose some value.

Advantages of going private to company

- Costs of meeting listing requirements can be saved
- Company protected from volatility in share prices which financial problems may create
- Company less vulnerable to hostile takeover bids
- Management can concentrate on long-term business

Notes

20: Business failure and insolvency

Topic List

Causes of business failure

Methods of predicting failure

Insolvency

In this chapter we look at the common factors leading to business failure, methods of predicting failure and the key aspects of insolvency.

Causes of business failure

- Bad management
- Weak capital structure
- Poor financial management
- Structural economic/market changes
- High cost structure
- Big projects/acquisitions
- Other - poor strategic decisions; poor cost control; creative accounting; fraud

**Common problem areas for treasury**

- Inadequate or excessive liquidity
- Inadequate capital and excessive gearing
- Inability to access funding
- Interest rate increase or adverse currency movements
- Business market or product/service failure
- Cash management
- Breach of lending documentation
- Shareholder, bank and capital market dissatisfaction
- Excessive risk (business or financial)
- Lack of internal controls within the treasury function

Ideal capital structure

- Cheaper average cost of funds
- Well-managed level of financial risk

Problems: over-reliance on external borrowings (excessive debt)



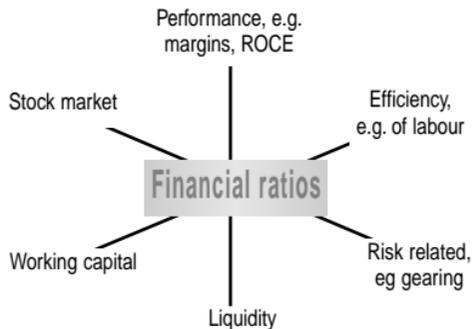
Unacceptable levels of operating and financial gearing

**Causes of excessive debt**

- High gearing policy
- Capital losses due to fall in asset prices
- Complex ownership structure
- Overtrading
- Overpaying for acquisition
- Doomed projects
- Underperforming business units
- Excessive working capital
- Recessionary economy

Solutions

- Understand financial risks
- Involvement of central control
- Simplicity over complexity
- Involvement of central control



Beaver's failure ratio =

$$\frac{\text{Operating cashflow (EBIT)} + \text{Depreciation} - \text{Taxes}}{\text{Short and long term debts}}$$

Studies show companies with a ratio of < 0.3 often fail within 5 years

Z score (Altman)

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

Measures the significance of:

- | | |
|---|-------------------------------|
| $X_1 = \text{working capital/total assets}$ | - Liquidity |
| $X_2 = \text{retained earnings/total assets}$ | - Cumulative profitability |
| $X_3 = \text{EBIT/total assets}$ | - Current profitability |
| $X_4 = \text{MV of equity/BV of total debt}$ | - Gearing levels |
| $X_5 = \text{Sales/total assets}$ | - Revenue generating capacity |

A Z score below 1.8 indicates a strong possibility of insolvency

Bankruptcy

a legally declared inability or impairment of ability of an organisation to pay its creditors

Creditors may file a bankruptcy petition against a debtor (**involuntary bankruptcy** or **winding-up**) in an effort to recoup a portion of what they are owed or initiate a financial restructuring

In a **winding-up** of a limited company, all the assets of the company would be realised (sold off and converted to cash) through a legal process in order to repay its debts. Winding-up would bring the company to an end.

Bankruptcy initiated by the insolvent organisation is known as **voluntary bankruptcy** or winding-up.

Overview of the process for an involuntary winding-up

Creditor issues a written demand for debt repayment to the target company



Creditor presents a winding-up petition to the Court and the company



Court hearing for the petition



Granting of winding-up order by the Court



Meeting of creditors and other relevant parties



Appointment of liquidator



Realisation and distribution of company's assets to the creditors



Release of duties for liquidator



Dissolution of the company

Procedure for a voluntary winding-up

Special resolution for winding up by shareholders (as recommended by the directors)

Meeting of creditors

Liquidator appointed

Committee of inspection (creditor representatives) may be appointed to assist liquidator

Directors prepare full statement of the company's affairs, list of creditors and estimate of amounts owed

Liquidator sells off company assets. Payment to creditors as much as possible, in accordance with priority of claims

Final meeting of creditors. Liquidator released. Company dissolved

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