Chapter 7: Introduction to corporate finance

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2. Financial statements
3. Financial analysis and planning

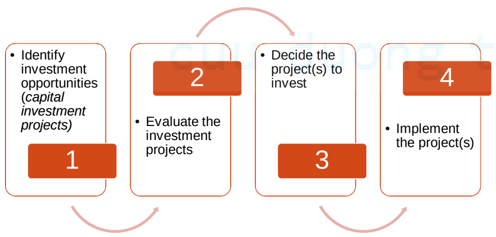
1. Introduction to corporate finance

- Concepts of corporate finance
- Forms of business operation
- Financial managers
- Goals of the corporation

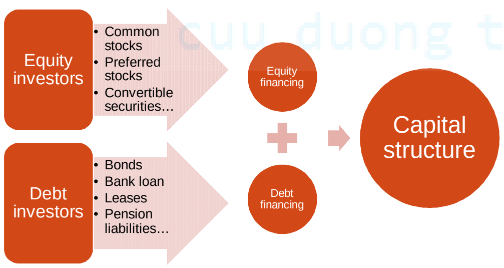
Concepts of corporate finance

- **Corporate finance** boils down to the investment and financing decisions made by corporations.
- Making good investment and financing decisions is the chief task of the financial manager
  - **Investment decision (or capital budgeting decision)** is the decision to invest in tangible or intangible assets.
  - **Financing decision** deals with the form and amount of financing of a firm's investments.

Investment decision



Financing decision



Relationship of investment decisions and financing decision

(1) Cash raised by selling financial assets to investors
(2) Cash invested in the firm's operation
(3) Cash generated by the firm's operation
(4a) Cash reinvested
(4b) Cash returned to investors

Flow of cash between investors and the firm's operations

Forms of business operations

- Sole Proprietorship
- Partnership
- Corporation
- Other forms

Sole proprietorship

- a firm owned by an individual or family
- the assets and liabilities are the personal assets and liabilities of the proprietor
- unlimited liability
- low administrative costs

Partnership

- A firm with ≥ 2 owners sharing the equity. A partnership agreement usually stipulates how decisions and profits (losses) are shared
  - General partners ≥ 1 (unlimited liability)
  - Limited partners ≥ 0 (don't manage business)
- Most partnership are establish by a written contract known as the **articles of partnership**.
- Changes in ownership involve dissolving the old partnership and forming a new one

Corporation

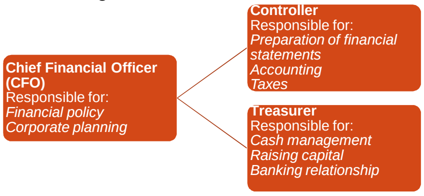
- a legal entity, distinct from its ownership
- may own property, borrow, sue, be sued, and enter into legal contracts
- not dissolved when shares are transferred
- shareholders elect directors, who appoint management
- pays corporate taxes, resulting in double taxation of owner (not sub-chapter S Corp.)
- limited liability (corporate veil may be lifted)

Other forms of business

- Some hybrid forms of business, which combine the tax advantage of partnership with the limited liability advantage of corporation:
  - Limited liability partnership (LLP) or
  - Limited liability company (LLC)
  - Professional corporation (PC)

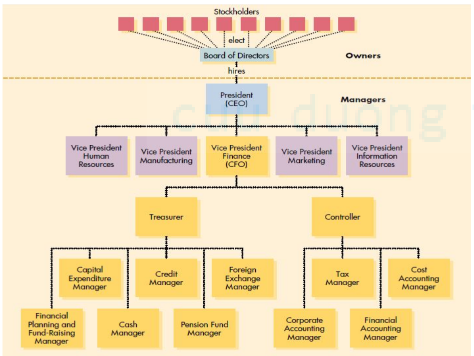
Financial managers

- The term **financial manager** refers to anyone responsible for a significant corporate investment or financing decision.



Financial managers in large corporations

The general organisation of a corporation and the finance function



Goals of the corporation

- For small corporations, shareholders and management may be one and the same
- For large corporation, separation of ownership and management is a practical necessity.
  - As large corporations usually have many owners (shareholders), there is no way that these shareholders can actively involve in the management. It needs to be delegated.
  - professional managers have specialized skills
  - efficiencies of scale
  - diversification of owner's portfolio
  - savings in the cost of information gathering
  - learning curve/going concern issues

Goals of the corporation

- **Management rule**: Maximize the wealth of current shareholders (market value of shareholder's investment in the firm)
  - Rule depends only upon production technology, market interest rates, market risk premiums, and security prices
  - Alternative rules stated in terms of "profit maximization" are fraught with unresolved issues, and are better avoided because a corporation could increase profit by using methods that conflict with shareholders' interest.

Goals of the corporation

- **Agency problem:** managers, acting as agents for stockholders, may act in their own interests rather than maximising value.
- Agency problems are mitigated in several ways:
  - Legal and regulatory standards
  - Compensation plans
  - Monitoring by lenders, stock market analysts, and investors
  - The threat that poorly performing managers will be fired

2. Financial statements

- Concepts of financial statements
- The balance sheet
- The income statement
- The statement of cash flows
- Accounting malpractice

Concepts of financial statements

- Reasons to study financial statements
- Functions of financial statements
- The key financial statements

Reason to study financial statements

- Financial statements are prepared according to rules established by the accounting profession published periodically
- Although accounting is not the same as finance, but if you don't understand the basics of accounting, you won't understand finance, either; because:
- Much of the information about businesses and other organisations available to financial decision makers comes is included in financial statements.

Functions of financial statements

- Provide information to stakeholders of the firm about the company's current status and past financial performance.
- Provide a convenient way for owners and creditors to set performance targets and to impose restrictions on the managers of the firm.
- Provide convenient templates for financial planning

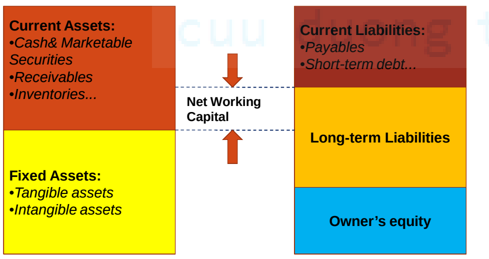
The key financial statements

- The balance sheet
- The income statement
- The statement of cash flows

The balance sheet

- **Balance sheet** is the financial statement that shows the firm's ***assets (the uses of the funds raised)*** and ***liabilities (the sources of funds)*** at a particular time.
- The different between the assets and the liabilities is the ***net worth***, also called ***owner's equity*** (for a corporation, it is called as *stockholder's equity*)

The balance sheet



Total assets = Total liabilities + Owner's equity

CONSOLIDATED BALANCE SHEET FOR PEPSICO, INC., As of December 31 (millions of dollars) brought

Assets	**2006**	**2005**	**Liabilities and Shareholders' Equity**	**2006**	**2005**
Current assets			***Current liabilities***		
Cash & Marketable securities	1,651	1,716	Debt due for repayment	274	2,889
Receivables	3,725	3,261	Account payable	5,271	5,357
Inventories	1,926	1,693	Other current liabilities	1,315	1,160
Other current assets	1,828	3,784	*Total current liabilities*	6,860	9,406
Total current assets	9,139	10,454			
Fixed asset			***Long-term debt***	2,550	2,313
Tangible fixed assets			***Deferred income taxes***	528	1,434
Property, plant, and equipment	19,058	16,646	***Other-long term liabilities***	4,624	4,323
Less accumulated depreciation	9,371	7,965			
Net tangible fixed assets	9,687	8,681	**Total liabilities**	14,562	17,476
Intangible fixed assets			**Shareholders' equity**		
Goodwill	4,594	4,088	Common stock and other paid-in capital	614	644
Other intangible assets	1,849	1,616	Retained earnings	22,591	18,803
Total intangible fixed assets	6,443	5,704	Treasury stock	(7,837)	(5,196)
			Total shareholders' equity	15,368	14,251
Total fixed assets	16,130	14,385			
			Total liabilities and shareholders' equity	**29,930**	**31,727**
Other assets	4,670	6,888			
Total assets	**29,930**	**31,727**			

Book value vs. Market value

- **Book value** is the value of assets or liabilities according to the balance sheet.
- Book values are based on historical or original values.
- Therefore, book value is a "backward-looking" measure of value.
- **Market values** measure current values of asset and liabilities
- Market value is a "forward-looking" measure of value. It depends on the profits that investors expect the assets to provide.

The income statement

- **Income statement** is the financial statement that shows the revenues, expenses, and net income of a firm over a period of time.
- It shows how profitable the firm has been during the past period.

CONSOLIDATED INCOME STATEMENT FOR PEPSICO, INC., 2006		
	$ millions	**% of sales**
Net sales	35,753	100.0
Cost of goods sold	15,762	44.1
Selling, general, and administrative expenses	11,357	32.2
Depreciation	1,406	3.9
Earnings before interest and income taxes	7,228	19.7
Interest expense	239	0.2
Taxable income	6,989	19.5
Taxes	1,347	3.8
Net income	5,462	15.8
Allocation of net income		
Dividends	1,854	5.2
Addition to retained earnings	3,788	10.6

Profits vs. Cash flow

- The firm's cash flow can be quite different from its net income, because:
  - The income statement does not recognise capital expenditures as expenses in the year that the capital goods are paid for. Instead, it spreads those expenses over time in the form of an annual deduction for depreciation.
  - The income statement uses the accrual method of accounting, which means that revenues and expenses are recognised when sales are made, rather than when the

Profits vs. Cash flow

- How profits and cash are not the same:
  - To calculate the cash produce by the business, it is necessary to add back the depreciation charge (which is not a cash payment) and to subtract the expenditure on new capital equipment (which is a cash payment)
  - The cash that the firm receives is equal to the sales shown in the income statement less the increase in unpaid bills
  - The cash outflow is equal to the cost of goods sold, which is shown in the income

The statement of cash flows

- **The statement of cash flows** is the financial statement that shows the firm's cash receipts and cash payments over a period of time.
- It shows the firm's cash inflows and outflows from operations as well as from its investments and financing activities.

CONSOLIDATED STATEMENT OF CASH FLOWS FOR PEPSICO (for the year ended December 31, 2008 (mil)	
Cash provided by operations	
Net income	5,642
Noncash expenses	
Depreciation and amortisation	1,406
Changes in working capital	
Decrease (increase) in account receivable	(464)
Decrease (increase) in inventories	(233)
Increase (decrease) in accounts payable	(86)
Decrease (increase) in other current assets	1,956
Increase (decrease) in other current liabilities	155
Total decrease (increase) in working capital	1,328
Cash provided by operations	8,376

CONSOLIDATED STATEMENT OF CASH FLOWS FOR PEPSICO (cont.) (for the year ended December 31, 2008 (mil)	
Cash flows from investments	
Cash provided by (used for) disposal of (additions to) property, plant, and equipment	(2,412)
Sales (acquisitions) of other investments	1,479
Cash provided by (used for) investments	(933)
Cash provided by (used for) financing activities	
Additions to (reduction in) short-term debt	(2,615)
Additions to (reduction in) long-term debt	237
Dividends paid	(1,854)
Net issues (repurchases) of stock	(2,671)
Other	(605)
Cash provided by (used for) financing activities	(7,508)
Net increase (decrease) in cash and cash equivalents	(65)

The statement of cash flows

- **Free cash flow**: Cash available for distribution to investors after firm pays for new investments or additions to working capital
- Free cash flow = EBIT – taxes + depreciation
  - change in net working capital
  - capital expenditures

Accounting malpractice

- Managers of public companies faces pressure about accounting earnings
- They could conceal unflattering information without adjusting the firm's operations by misusing the discretion in accounting rules or simply breaking those rules. They could make changes in:
  - Revenue recognition: E.g. Xerox : Inflate the revenue
  - Cookie-jar reserves: E.g. Freddie Mac :Over-reserve in good years and release those reserves in bad years to smooth earnings growth
  - Off-balance sheet assets & liabilities: E.g. Enron: creating special-purpose vehicles for excluding liabilities from their financial statements

3. Financial analysis and planning

- Financial analysis
- Financial planning

Financial analysis

- In analysing a firm's performance using its financial statements, it is useful to apply some financial analysing approaches:
  - Cross-sectional: Comparison against peers
  - Time-series: Comparison against self over time
  - Common-size (vertical) analysis
  - Trend (horizontal) analysis
  - Financial ratios: allow comparison between different size firms on a common basis
- To measure the outcome of these analyses, you need to compare:
  - Against self (time-series, vertical, horizontal) and
  - Against peers/industry/market (cross-sectional, ratio)
  - Against general measures
- For the best result, these approaches usually be applied simultaneously.

Financial ratios

- Categories of financial ratios
- The DuPont system of analysis
- Limitations of ratio analysis

Categories of financial ratios

- Profitability ratios
- Asset turnover (Efficiency/Activity) ratios
- Debt (Financial leverage) ratios
- Liquidity ratios
- Market value ratios

Profitability ratios

- Gross profit margin
- Net profit margin
- Return on assets (ROA)
- Return on Equity (ROE)
- Earning per share (EPS)

Gross profit margin

- **Gross profit margin:** indicates the percentage of each sales dollar remaining after the firm has paid for its goods.

$$gross\ profit\ margin = \frac{sales - cost\ of\ goods\ sold}{sales}$$

Net profit margin

- **Net profit margin:** measures the percentage of each sales dollar remaining after all expenses, including interest and taxes, have been deducted

$$Net\ profit\ margin = \frac{net\ profits\ after\ taxes}{sales}$$

Return on Assets (ROA)

- **Return on assets:** measures the overall effectiveness of management in generating profits with its available assets.

$$ROA = \frac{net\ profits\ after\ taxes}{total\ assets}$$

Return on equity (ROE)

- **Return on equity:** measures the return earned on the ordinary shareholder's investment in the firm.

$$ROE = \frac{net\ profits\ after\ taxes}{ordinary\ shareholder'sequity}$$

Earning per share (EPS)

- **Earning per share:** represents the number of dollar earned on behalf of each share.

$$EPS = \frac{earnings\ available\ for\ ordinary\ shareholders}{number\ of\ ordinary\ shares\ issued}$$

- Note that it does note represent the amount of earnings actually distributed to shareholders (dividend per share - DPS).

Asset turnover ratios

- Inventory turnover
- Average collection period (average age of accounts receivables)
- Average payment period (average age of accounts payables)
- Total asset turnover

Inventory turnover

- **Inventory turnover** measures the activity, or liquidity, of a firm's inventory

$$Inventory\ turnover = \frac{cost\ of\ goods\ sold}{inventory}$$

- Inventory turnover can be converted to the average age of inventory by dividing it into the numbers of day in a year.

$$days\ inventory = \frac{inventory}{cost\ of\ goods\ sold} \times 365$$

Average collection period

- **Average collection period (average age of accounts receivables):** the average amount of time needed to collect accounts receivable.

$$average\ collection\ period = \frac{account\ receivable}{average\ sales\ per\ day} = \frac{account\ receivable}{average\ sales} \times 365$$

Average payment period

- **Average payment period (average age of accounts payables):** the average amount of time needed to pay account payable.

$$average\ payment\ period = \frac{account\ payable}{average\ purchases\ per\ day} = \frac{account\ payable}{annual\ purchases} \times 365$$

- Annual purchases can be calculated by deducting beginning inventory from annual cost of goods sold plus ending inventory.

Total asset turnover

- **Total asset turnover:** indicates the efficiency with which the firm uses all its assets to generates sales.

$$total\ asset\ turnover = \frac{sales}{total\ assets}$$

Debt ratios

- Debt ratio
- Time interest earned ratio

Debt ratio

- **Debt ratio:** measures the proportion of total assets financed by the firm's creditors.

$$debt\ ratio = \frac{total\ liabilities}{total\ assets}$$

Time interest earned ratio

- **Time interest earned ratio:** measures the firm's ability to make contractual interest payments.

$$times\ interest\ earned = \frac{earning\ before\ interest\ and\ taxes}{interest}$$

Liquidity ratios

- Current ratio
- Quick (acid test) ratio

Current ratio

- **Current ratio**: is a measure of liquidity calculated by dividing the firm's current assets by current liabilities.

$$current\ ratio = \frac{current\ assets}{current\ liabilities}$$

Quick (acid test) ratio

- Quick (acid test) ratio: a measure of liquidity calculated by dividing the firm's current assets minus inventory by current liabilities.

$$quick\ ratio = \frac{current\ assets - inventory}{current\ liabilities}$$

Market value ratios

- Price to earnings (P/E) ratio
- Market to book (M/B) ratio

Price to earning ratio

- **Price to earnings (P/E) ratio:** measures the amount that investors are willing to pay for each dollar of a firm's earnings; the higher the P/E ratio, the greater is investor confidence.

$$P/E\ ratio = \frac{market\ price\ per\ ordinary\ share}{EPS}$$

Market to book ratio

- **Market to book (M/B) ratio:** provides an assessment of how investors view the firm's performance. Firms expected to earn high returns relative to their risk typically sell at higher M/B multiples.

$$Market/book\ ratio = \frac{market\ price\ per\ share}{book\ value\ per\ share}$$

$$book\ value\ per\ share = \frac{ordinary\ share\ equity}{number\ of\ shares\ issued}$$

The DuPont analysis

- The DuPont formula: relates the firm's net profit margin and total asset turnover to its ROA. The ROA is the product of the net profit margin and the total asset turnover.

$$ROA = net\ profit\ margin \times total\ asset\ turnover$$

$$ROA = \frac{net\ profit\ after\ taxes}{sales} \times \frac{sales}{total\ assets} = \frac{net\ profit\ after\ taxes}{total\ assets}$$

The DuPont analysis

- The modified DuPont formula: relates the firm's ROA to its ROE using the financial leverage multiplier.

$$ROE - ROA \times financial\ leverage\ multiplier$$

$$ROE = \frac{net\ profit\ after\ taxes}{total\ assets} \times \frac{total\ assets}{ordinary\ shareholers'\ equity}$$
$$= \frac{net\ profit\ after\ taxes}{ordinary\ shareholers'\ equity}$$

Limitations of ratios analysis

- There is no absolute standard by which to judge whether the ratios are too high or too low
- Historical data (not necessarily an indication of future)
- Poor or inadequate accounting methods
- Inflation or changes to fair values
- It is difficult to define a set of comparable firms
- Changes to economy, markets condition,...

Financial planning

- Financial planning provides road maps for guiding, coordinating and controlling the firm's actions in order to achieve its objectives.
- **Financial planning process:** is the planning the begins with long-run (strategic) financial plans that in turn guide the formulation of short run (operating) plans and budgets.