

## Financial Management : 1.Financial Analysis

1. Financial management refers to the **management of the financial resource** and **financial obligation of a firm** in order to achieve the firm's goals.

### 4 Major decision and function of financial management:

- **Investment decision** 投資評估: where to invest
  - ☆factor affecting long-term investment (1) **financial factor (NPV)** (2) **non-financial factor(human)**
- **Financing decision** 融資: how to obtain capital or funding
  - ☆Debt-financing: borrowing short-term or long-term debt to support firms
  - ☆ equity financing: #issuing share #internal financing
  - e.g. use of retained profit

**Debt + equity = Assets**
- **Dividend decision** 分錢: how much should be paid out in dividends and in what forms (Distribution of profit) e.g. 派息俾股東——派幾多? 自己保留? **[Dividend vs retained profit]**
- **Working capital decision (營運資本管理)**: how to manage funding for daily business operation
  - ☆refer to **daily operation** E.g. \*inventory management \*credit policy (account payable/ receivable)
- **Budgeting** (no budgeting when planning ~ easy to over-budget: **e.g. Variance**)

- 1) **Financing decision** 融資
- 2) **Investment decision** 投資評估
- 3) **Working capital management** 營運資本管理
- 4) **Budgeting** 預算編製
- 5) **Distribution of profits** 盈利分派

2. The **ultimate goal** of a firm is to **maximize stockholders' wealth**

### 2) Accounting Ratios

- i. **Profitability** 盈利能力
- ii. **Liquidity** 變現能力
- iii. **Management efficiency** 管理效能
- iv. **Solvency ratios** 償債能力

## 1.2 Accounting Ratios

	Financial Ratios	Measurement	Examples
1.	Profitability Ratios	Measure the <b>earning power</b> of the firm	<ul style="list-style-type: none"> <li>- Gross Profit Margin</li> <li>- Net Profit Margin</li> <li>- Return on Capital Employed</li> </ul>
2.	Liquidity Ratios	Measure the firm's <b>ability to repay short-term debts</b>	<ul style="list-style-type: none"> <li>- Current Ratio</li> <li>- Quick Ratio</li> </ul>
3.	Management Efficiency Ratios	Measure how <b>efficiency</b> the firm <b>utilizes its assets</b>	<ul style="list-style-type: none"> <li>- Inventory Turnover</li> <li>- Accounts Receivable Turnover</li> <li>- Accounts Payable Turnover</li> <li>- Total Assets Turnover</li> </ul>
4.	Solvency Ratio	Measure the firm's <b>use of financial leverage</b>	<ul style="list-style-type: none"> <li>- Gearing Ratio</li> </ul>

### 1.2.1 Profitability Ratios

$$\text{gross profit ratio/margin} = \frac{\text{gross profit}}{\text{sales}} \times 100\%$$

- measure the ability to earn gross profit after deducting cost of sales

$$\text{net profit ratio/margin} = \frac{\text{net profit before tax}}{\text{sales}} \times 100\%$$

- measure the ability to earn net profit after deducting operating expenses

$$\text{return on capital employed} = \frac{\text{profit before interest and tax}}{\text{average capital employed}} \times 100\%$$

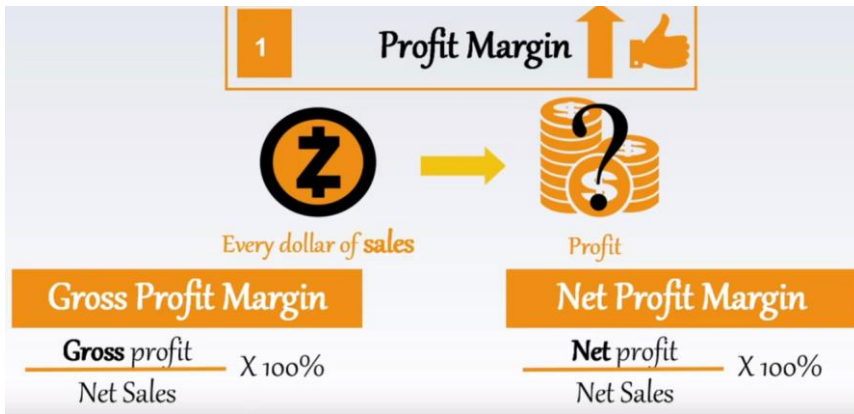
- measure the ability to earn a return by utilizing capital

Capital employed =

1. Sole proprietorships: capital balance
2. Partnerships: capital account balances + current account balances (if any)
3. Limited companies: non-current liabilities + shareholders' fund

**Profitability ratio:**

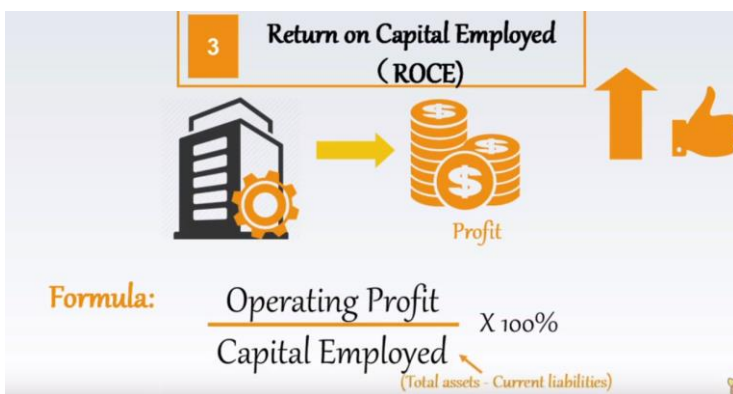
- Measure the **earning power** of the firm
- **Gross profit ratio** =  $\text{Gross profit} \div \text{Sale} \times 100\%$   
**Gross profit** = net sales - cost of good sold



- **Net profit ratio** =  $\text{Net profit before tax} \div \text{Sale} \times 100\%$   
**Net profit** = gross profit - expenses + revenue

Remark: you can find information in income statements to find net/gross profit ratio

- **Return on capital employed** =  $\text{Net profit before interest and tax} \div \text{Average capital employed} \times 100\%$   
 ☆ calculation of capital employed  
 (1) sole proprietorship: capital balance  
 (2) Limited company: Non-current liability + shareholders' fund (detail in gearing ratio)



☆ measuring the ability to earn a return by utilizing capital (放一蚊落去會有幾多 return)

- Remarks: Use closing capital when there is one-year data is given

**Liquidity ratio: 變現能力**

(i) working capital/ current ratio =  $\frac{\text{current assets}}{\text{current liabilities}} : 1$   
 營運資金/流動比率

✓ **Measure the firm's ability to repay short term debt**

**(Measure how much current assets is available to repay every \$1 in current liabilities)**

● **Current(working capital) ratio** = Current assets ÷ Current liabilities : 1

✓ E.g. 2:1 =one dollar current liability backup by two dollar current asset

✓ **Ratio is too high:** so many idle current asset——miss investment opportunities

✓ **Ratio is too low :** poor liquidity ——may not have sufficient current assets to repay short-term debts / maybe go bankrupt

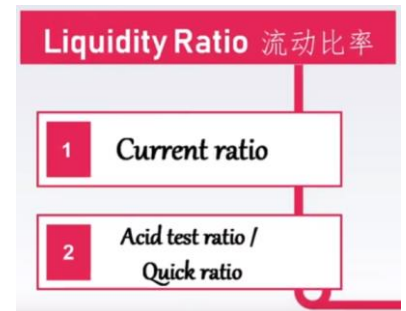
**1 Current ratio** ↑

**Formula:**

$$\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\$1,200,000}{\$600,000} = 2 : 1$$

↑ 资产的变现能力 短期偿债能力

保证全部的流动负债得到偿还



● **Quick ratio = (Current assets – Inventory) ÷ Current liabilities : 1**

**Measure how much liquid assets is available to repay every \$1 in current liabilities**

(ii) quick/ liquid/ acid test ratio =  $\frac{\text{current assets} - \text{inventories}}{\text{current liabilities}} : 1$   
 速動/酸性測驗比率

✓ It is a **stricter** measure because inventory has lowest liquidity

✓ Measure the ability to **repay immediate debts** by **liquid asset**

✓ A significant difference between quick ratio and current ratio implies the firm has **higher proportion of funds tied up in inventory.**

✧ Remark: if the ratio is greater than 1—— the firm has the ability to pay short term obligation

**2 Acid test ratio** ↑  
/ Quick ratio

**Formula:**

$$\frac{\text{Current assets - stock - prepaid expenses}}{\text{Current liabilities}} = 1 : 1$$

Or

$$\frac{\text{Cash + Short-term Investment + Receivables}}{\text{Current liabilities}} = 1 : 1$$

快

立即变成

可用于偿还负债

能够立刻还清已到期的债务

**Solvency ratio (償債能力):**

✓ **It measure firm's use of financial leverage**

● **Gearing ratio**

= (Non-current liabilities + Preference share capital) ÷ (Non-current liabilities + Shareholders' fund)

**1.2.4 Solvency Ratio**

$$\text{gearing ratio} = \frac{\text{non-current liabilities} + \text{preference share capital}}{\text{non-current liabilities} + \text{shareholders' fund}} \times 100\%$$

● measure how much funds are supplied by long-term debts

● Shareholders' fund = ordinary share / preference share / retained earnings / reserve

● Regular payment: non-current liabilities (interests) + Preference share capital (dividend)

✓ **Type of shareholders** (1) ordinary shareholders (2) preference shareholders

✓ So type of shareholder's fund (1)ordinary shareholders capital (2)preference shareholder's capital  
(3)retained profit

✓ **Non-current liability**:一年以上 liability



✓ Non-current liability +shareholders fund= capital employed(as stated in profitability ratio)

✓ Gearing ratio measure capital ratio, **so the higher the gearing ratio, the greater the solvency risk**

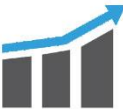
Non-current liabilities + Shareholders' fund Debt ratio = Total liabilities ÷ Total assets

● Debt-to-equity ratio = Total liabilities ÷ Owners' equity

● Interest cover = Earnings before interest and tax (EBIT) ÷ Interest expense

**Debt to Equity Ratio Formula** =  $\frac{\text{Total Liabilities}}{\text{Total Equity}}$





## 1.2.3 Management Efficiency Ratios

$$\text{inventory turnover (times)} = \frac{\text{cost of goods sold}}{\text{average inventory}}$$

- measure the efficiency of using inventory in generating sales

$$\text{trade receivables turnover (times)} = \frac{\text{credit sales}}{\text{average trade receivables}}$$

- measure how fast the company collect money from its trade debtors

$$\text{trade payables turnover (times)} = \frac{\text{credit purchases}}{\text{average trade payables}}$$

- measure how fast the company pay money to its trade creditors

$$\text{total assets turnover (times)} = \frac{\text{sales}}{\text{total assets}}$$

- measure the efficiency of using total assets to generate sales

### 3. Management efficiency ratio:

#### ✓ Measure how efficiency the firm utilize its assets

- Inventory turnover [ \_ times ] = Cost of goods sold ÷ Average inventory



- Trade receivables turnover [ \_ times ] = Credit sales ÷ Average trade receivables
- Trade payables turnover [ \_ times ] = Credit purchases ÷ Average trade payables
- ✓ Not more of it is preferred, the times should be similar to industry average
- Total assets turnover [ \_ times ] = Sales ÷ Total assets



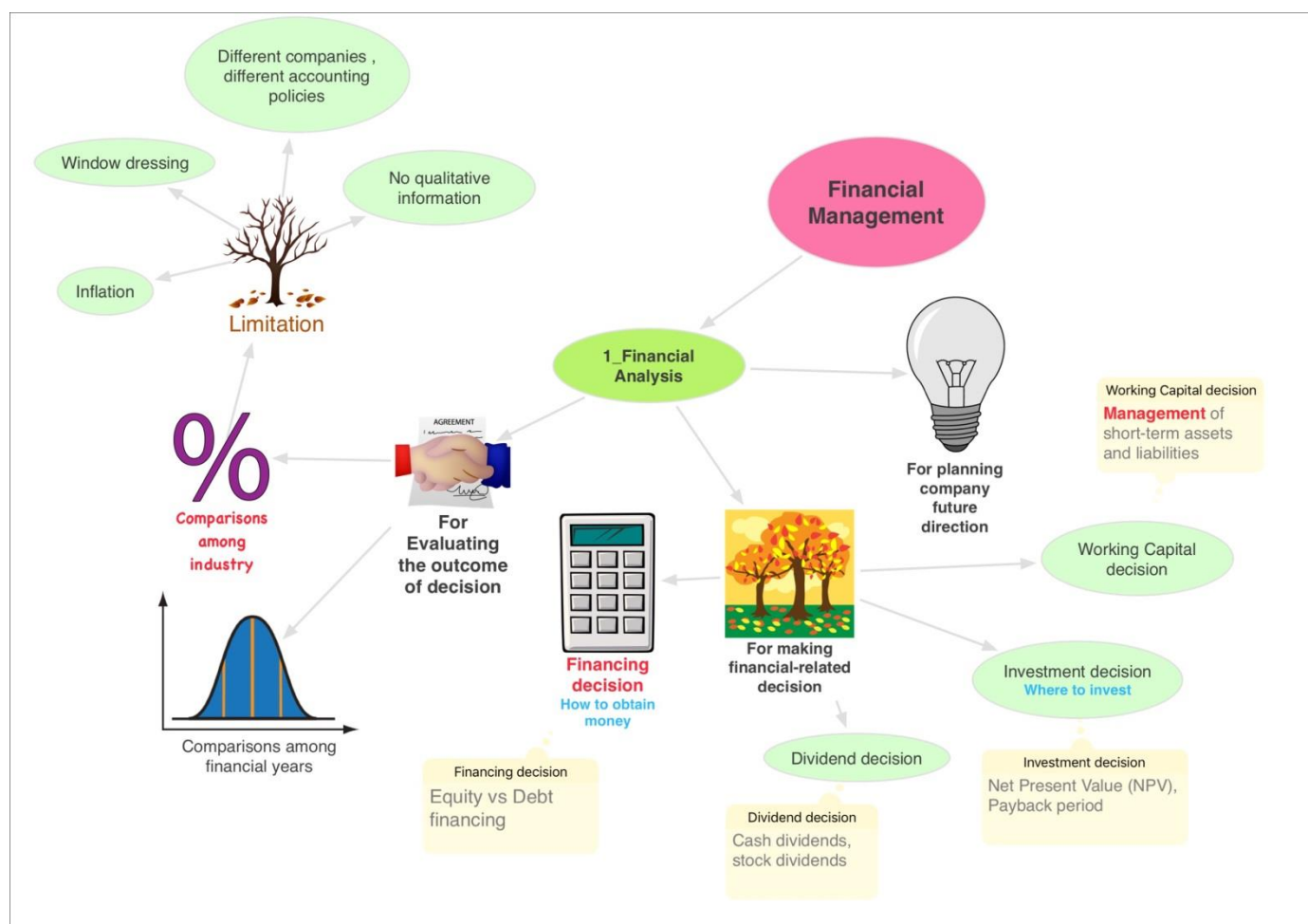
- ✓ Remarks: assume all credit purchase/sales
- ✓ For some average data, if there is only one year data, use closing balance
- ✓ If trade payable turnover is greater than trade receivable turnover, there may be some liquidity problems

### 4. Ratio analysis includes cross-sectional analysis and time-series analysis.

- Cross-sectional analysis refers to the use of certain benchmarks to assess the performance of a firm in a given period.
- ✓ Compare the firm's performance with
  - (i) its historical values
  - (ii) well-managed comparable firms
  - (iii) industry averages
- Time-series analysis refers to the use of trends in accounting ratio over time to assess the performance of a firm.

### 5. Limitation of ratio analysis

- Ratios cannot capture certain qualitative information about a firm
- ✓ Only reflect quantitative information
- ✓ Lack of qualitative information for example staff morale, staff management style, customer relationships
- Past data may not reflect a firm’s future financial condition
- Various accounting practices make comparison of ratios form different firms difficult
- ✓ Each firm use their own accounting policy to prepare financial statements, therefore it is difficult to make intra-company comparison.
- ✓ Different companies use different accounting policies / methods
  
- Difficult to identify industrial norms for firms with a unique mix of businesses
  
- Ratio analysis only helps reveal the source of a potential problem/success on the surface
- ✓ Reflect the problem without explaining causes by investigation reasons





## Financial Management : 2 Budgeting

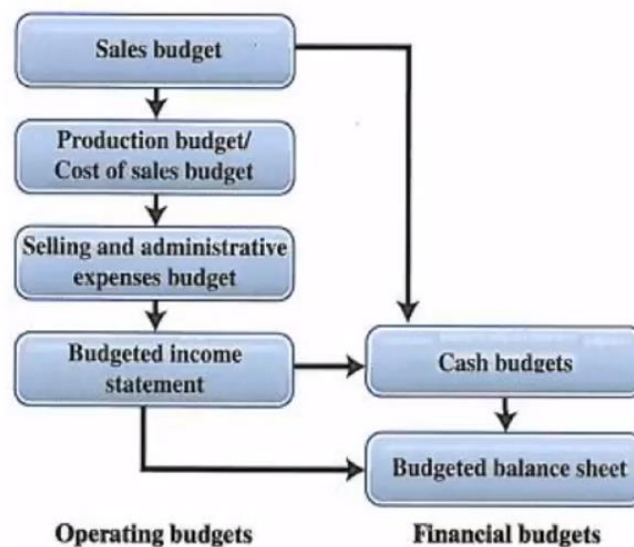
1. A budget is a **forecast of future income and expenses** . It is a **quantitative expression of a plan**.
  - Forward-looking[past figure + prediction]
  - Clear[presentation + responsibilities]
  - Seek improvement 尋求改進
  - Well-organized process[all department]
  - Comparison[actual]
  - Attainable
  - Fine-tune

### Budgeting:

- 1) Purposes of budgeting
- 2) Usefulness and Limitations of Budgetary Control
- 3) Budgeting Variance and Remedial Action

### What is Budgeting?

A budget is a plan which shows **projected revenue** and **expenditures** for a certain activity during a specific **period**.



## 2. The purposes of budgeting

### ✧ Use of management functions

#### (1) Planning:

- forecast figures provide **directions** for formulating action plan

#### (2) Organizing:

- budget information assists **resources allocation** and integration across various departments

#### (3) Leading:

- quantified indicators become specific **targets** for employees

#### (4) Controlling:

- budgeting figures serve as performance **standards**

- **Planning** : a)financial resources b)forecast profit/loss c)prevent possible financial difficulties
  - ✓ Forecast figures provide **directions** for formulating action plan
- **Coordinating(Organizing)**: interrelated → communication of department managers
  - ✓ Budget information assists **resources allocation** and integration across various department
  - ✓ Resources allocation: form **master budget**(DEF: It links together and summarizes all of a firm's budget)
- **Leading**: qualified indicators become specific **target** for employees
- **Controlling** : a)monitor & evaluate by comparison (i.e. compare actual spending)
  - b)identify underperforming department →remedy
  - ✓ Budget figures serve as **performance standards**

### 3. Usefulness

- Encouraging all department to **plan ahead** (未雨綢繆)
- ✓ In other word, it is a base for **long-term planning**
- ✓ **Discover potential opportunities and problems** (SWOT analysis)
- ✓ E.g. a market have potential opportunities ——more budget for expansion
- Improving **communication and coordination** within a firm
- ✓ Improve **departmental communication** by **consensus**
- ✓ **Resources allocation** ——more effective use
- **Providing benchmarks** to evaluate the performance of department and employee
- ✓ Use performance standards
- ✓ **Take corrective actions** to **avoid overspending/** underspending(better utilize of resources)
- Saving management time and effort

#### Usefulness

- (1) A base for long-term planning
  - discover potential opportunities and problems
- (2) A base for coordination
  - improve departmental communication by consensus
- (3) A base for control
  - take corrective actions to avoid overspending

### 4. Limitation

- **Difficult to forecast** the ever changing business environment
- ✓ Budget may **not be able to catch up** accordingly even if there is flexible budgeting(i.e. review and update regularly)
- Cannot be a substitute for **sound management decision**
- May **hinder** employees from achieving excellence
- **Discourage** employees from exceeding target as there is possibility of receiving higher target next year if they exceeded budgeted goals
- Adequate **training** for budgeting staff is need
- Budgeting staff may have made **unrealistic estimates**( underestimate/overestimate)
- **Costly and time consuming**

#### Limitations

- (1) Business environment changes rapidly
  - >> budgets may not be able to catch up accordingly
- (2) Budgeting staff may have made unrealistic estimates
  - >> under-estimation / over-estimation
- (3) Non-quantitative achievements not reveled in budgets
  - >> relationship with customers/ suppliers/ employees
- (4) Budgeted sales results achieved by window dressing

5. **Budgeting Variance**-difference between budgeted and actual amounts [**unfavorable : revenue↓/cost↑**]

- Consider : too small amount / adverse effects → cost effectiveness of investigation & correction
- Reason : (a)poor budgeting [e.g. too optimistic] (b)uncontrollable factors [e.g. financial tsunami]

**I. Causes :**

<b>Budgeting variance</b>	<b>Causes</b>
<b>Sale variance</b>	(1) <b>selling price</b> e.g. tackle competitors (2) <b>sales volume</b> E.g. one off massive promotion/event (3) <b>product mix</b> [price]
<b>Material variance</b>	(1) <b>material price</b> : unexpectedly high inflation/small discount [e.g. smaller purchase] (related to suppliers supplied) / supplier supply (2) <b>material usage</b> : lower quality/less skilled workers[handle inputs]/theft ✓ Wastage
<b>Labor variance</b>	(1) <b>labor wage</b> : skills >necessary/labour union’s request / one-off (2) <b>labor efficiency</b> : unsuitable /lack of training/low morale/work slow / strike for overtime pay
<b>Operating expense Variance</b>	(1) Administration expenses e.g. rent level (2) Selling expenses e.g. advertising costs / sales commissions

Remarks: All causes and changes are **unexpected**

**II. Solutions**

**(a) Sales-volume[competitors] :**

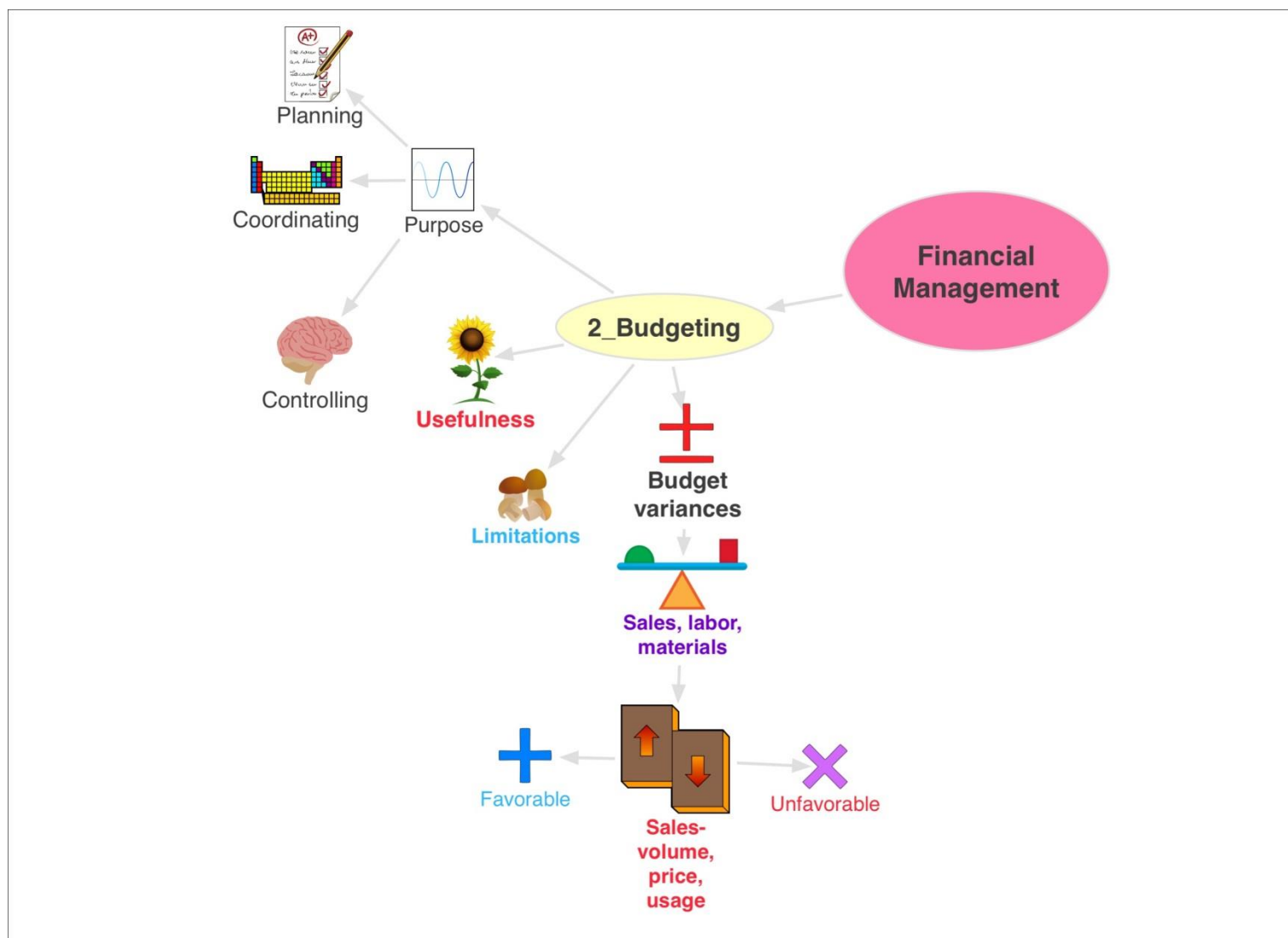
- More promotional tactics
- ✓ More advertisement for **brand recognition**
- ✓ Sales promotion with greater discounts (increase sale volume in a short period)
  - deeper discounts/aggressive pricing

**(b) Price[input/output] :**

- Bulk purchase for discount/cheaper materials in long-run/take over supplier
- Global sourcing for cheaper material
- Offer more fringe benefits (non- monetary compensation )

**(c) Usage[efficiency] :**

- Minimize wastage
- E.g. long labor hours →staff training/better machines
- Refine production process





## Financial Management : 3 Sources of Financing

### Key on this chapter

- ❖ **Source of financing( comparison)** 1. **Debt and equity financing** 2. short-term and long-term financing  
3. internal and external financing

Debt financing	Funds obtained from sources <b>other than owner</b>	Equity financing	Funds supplied by the owners
Short-term financing	Capital supplied for a period <b>less than 1 year</b>	Long-term financing	Capital supplied for a period <b>more than 1 year</b>
Internal financing	Funds obtained from <b>firm's internal cash flow</b> e.g. retained profit	External financing	Funds obtained from <b>sources outside firm</b>

- ❖ **Principal of selecting financing methods**

#### A. Short-term vs Long-term

- **Short-term** [refinancing-replacement of existing debt obligation with new one ]
  - Issue commercial paper : well-know banks & corporations
  - Short-term bank loan : small amount
  - Overdraft : withdrew > deposited [current account]
  - Accrued expenses : deferred payment for expenses [no interest cost]
  - Trade credit : deferred payment allowed by suppliers for purchases [within credit period]
  - Factoring accounting receivable: sell A/R to financial institution at lower price[receive cash earlier]
- **Long-term**
  - **Common stock** : Ltd.[ ≠preferred stock]
  - **Bonds** : Ltd.[may default : high interest rate]
  - **Issue share**
  - **Long-term bank loan** : larger amounts
  - **Use of retained profits**: undistributed
  - **Hire purchase**: rent goods & pay by instalment over a period [for expensive assets]
    - no ownership until full payment
    - leasing (租)** : similar but never own good

	Short-term: capital for period		Long-term: capital for period	
<b>Meaning</b>	Sources of financing that provide capital for a period of <b>less than one year</b> .		Sources of financing that provide capital for a period of <b>more than one year</b> .	
<b>Use</b>	Short-term needs		Financing fixed assets	
<b>Cost</b>	Lower [Adv.] (Interest payments)		Higher [Disadv.] (Higher Interest rate )	
<b>Flexibility</b>	Higher [Adv.]	Simpler application procedure (X collateral)	Lower	Still pay even no longer need [Disadv.] Stricter screening application Collateral required
<b>Risk</b>	Higher refinancing risk		Lower refinancing risk with a stable funding period	
<b>Risk</b>	Higher	Frequent refinancing needed [Disadv.]	Lower	Stable sources of capital [Adv]

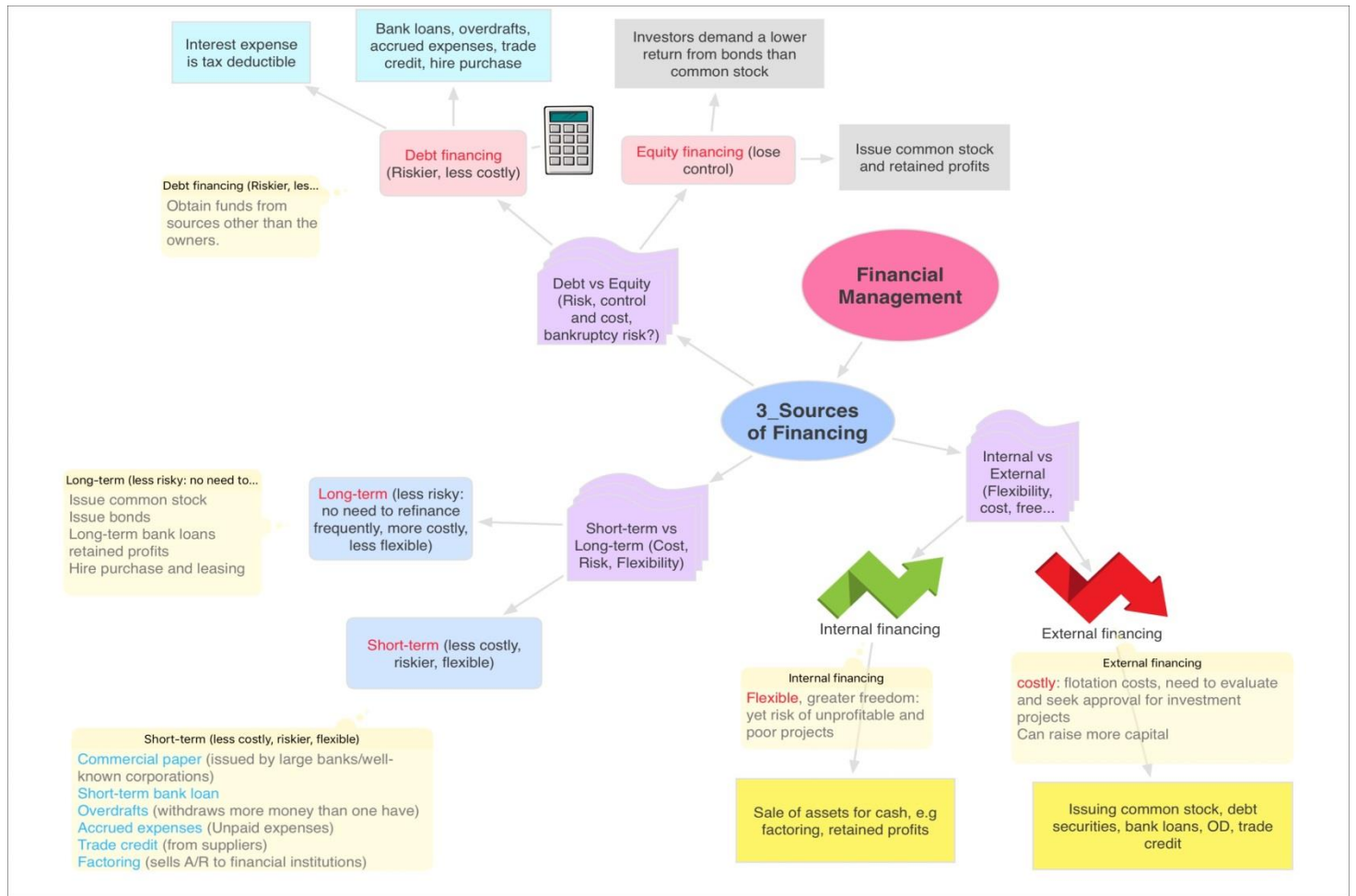
	Internal [retained profits] : internal cash flows			External [common stock] : sources outside firm		
<b>Example</b>	Use of retained profit Factoring account receivable Liquidation of fixed assets			Issue share/bond Borrow bank loan		
<b>Use</b>	Whenever available			Only when internal is insufficient		
<b>Cost</b>	Lower (No issuing cost)		Adv.	Higher [transaction cost/interest]		Disadv.
<b>Flexibility</b>	Higher	No need approval	Adv.	lower	Approval/laws	Disadv.
<b>Freedom [decision]</b>	Yes	No need approval/no extra owners	Adv.	No	Need approval/extra owners	Disadv.
		Careless → waste	Disadv.		Purpose disclosure +approval → careful	Adv.
<b>Capital raised</b>	Less		Disadv.	More		Adv.

**Debt vs Equity** [Debt : all except common stock & retained profits]

	<b>Debt [bonds] : sources other than other</b>			<b>Equity [common stock] : owners</b>		
<b>Use</b>	Low risk of bankruptcy [inexpensive : low cost]			High risk of bankruptcy [avoid high interest]		
<b>Risk [financial burden]</b>	Higher	-periodical interest -repay principal at maturity	Disadv.	Lower	-variable & not guaranteed -no maturity	Adv.
<b>Control</b>	Unaffected	Creditor :no voting right	Adv.	Reduced	-stockholders : voting right -risk : being taken over	Disadv.
<b>Cost</b>	Lower	- return demanded [secured interest & repayment priority] -tax deductible interest	Adv.	higher	Distribution of net profit _ can't reduce tax	Disadv.

Remarks: Debt financing

- ✓ Maturity date
- ✓ Interest



## Financial chapter 4-capital investment appraisal

Capital investment: long term investment related to production or operation: fixed asset - > productivity up  
- > profitability up

### A. factor to consider (investing)

Financial (timing: lack cash- > spread over year)

- a) **cost [cash outflow]:** amount + timing (initial [purchase, install]+ subsequent (maintenance)
- b) **Income [cash inflow]:** amount + timing (indirect income: cost of reduction relative to old assets)
- c) **Duration:** lock up capital for long time-> give up other projects.
- d) **Time value of money( cost of capital )** *-a dollar received Today is worth more than to receive future*  
( solution find PV of cash flows-> higher discount rate = lower return)
- e) **Uncertain future cash Flows**->demand for higher return->X invest if<required return.
- f) **Initial cash outlay:** purchase price
- g) **Opportunity cost:** consider alternative with highest return

Non-financial[ may ignore profitability]

- a) **Strategic goals** (eliminate threats, leadership)
- b) **Regulatory compliance:** environment and Safety ->best invest to avoid being sued and fined.
- c) **Industry standard:** quality ->competitiveness -> consumers' confidence
- d) **business image**
- e) **Staff morale:** workplace (equipment)->unquantifiable impacts

### B. Capital investment appraisal- analyzing best capital investment projects[ budgeting]

**Cash Flows (CF):** cash receipts and payments during investment period -> additional cash Flows instead of profits: actual amounts -> no accounting principles ( no depreciation)

**Depreciation:** systematic allocation of cost of non- current asset over its useful life.

1. **Account rate of return-** average annual **net profit** generated per dollar for average investment.

✓ Use **accounting approach** to calculate the **return rate** of the project

**Rule a)** target rate (comparison): acceptable when  $\geq$

b) Mutually exclusive: choose higher ARR



## 2. Payback period

✓ Evaluate the number of years required to recover the investment

**Rules:** a) set minimum period allowed (comparison): acceptable when  $\leq$  .

b) two mutually exclusive project: choose shorter period.

c) **Shorter** the payback period, **better** the project to be

Initial cost/ cash flow per year [If constant CF]

Initial cost over cash Flows from year 1 to (x-1)+ remaining cost/cash flow from year X [year X: total CF  $\geq$  cost]

3. **Net present value**-present value of Future net cash inflows, less the initial outlay.

= total PV of annual net cash inflows + PV of residual value - initial cost.

$$NPV = -C_0 + \frac{C_1}{(1+r)^1} + \frac{C_2}{(1+r)^2} + \dots + \frac{C_T}{(1+r)^T}$$

- |  |
|--|
| <p>a) NPV &lt; 0: rejected project</p> <p>b) NPV <math>\geq</math> 0: accept project</p> <p>c) mutually exclusive (all positive) : choose higher NPV</p> |
|--|

$C_0$ : Initial cash outlay  
 ( $\uparrow \rightarrow NPV \downarrow$ )  
 $C_1 \dots C_n$ : Net cash flow  
 (cash inflow / cash outflow)  
 ( $\uparrow \rightarrow NPV \uparrow$ )  
 $r$ : Discount rate / cost of capital  
 ( $\uparrow \rightarrow NPV \uparrow$ )  
 $n$ : projected life  
 ( $\uparrow \rightarrow NPV \uparrow$ )

✓ Use **discounted cash flow** to assess whether the project brings an **increase in net worth**

4. **Internal rate of return: discount rate at Which NPV is zero**

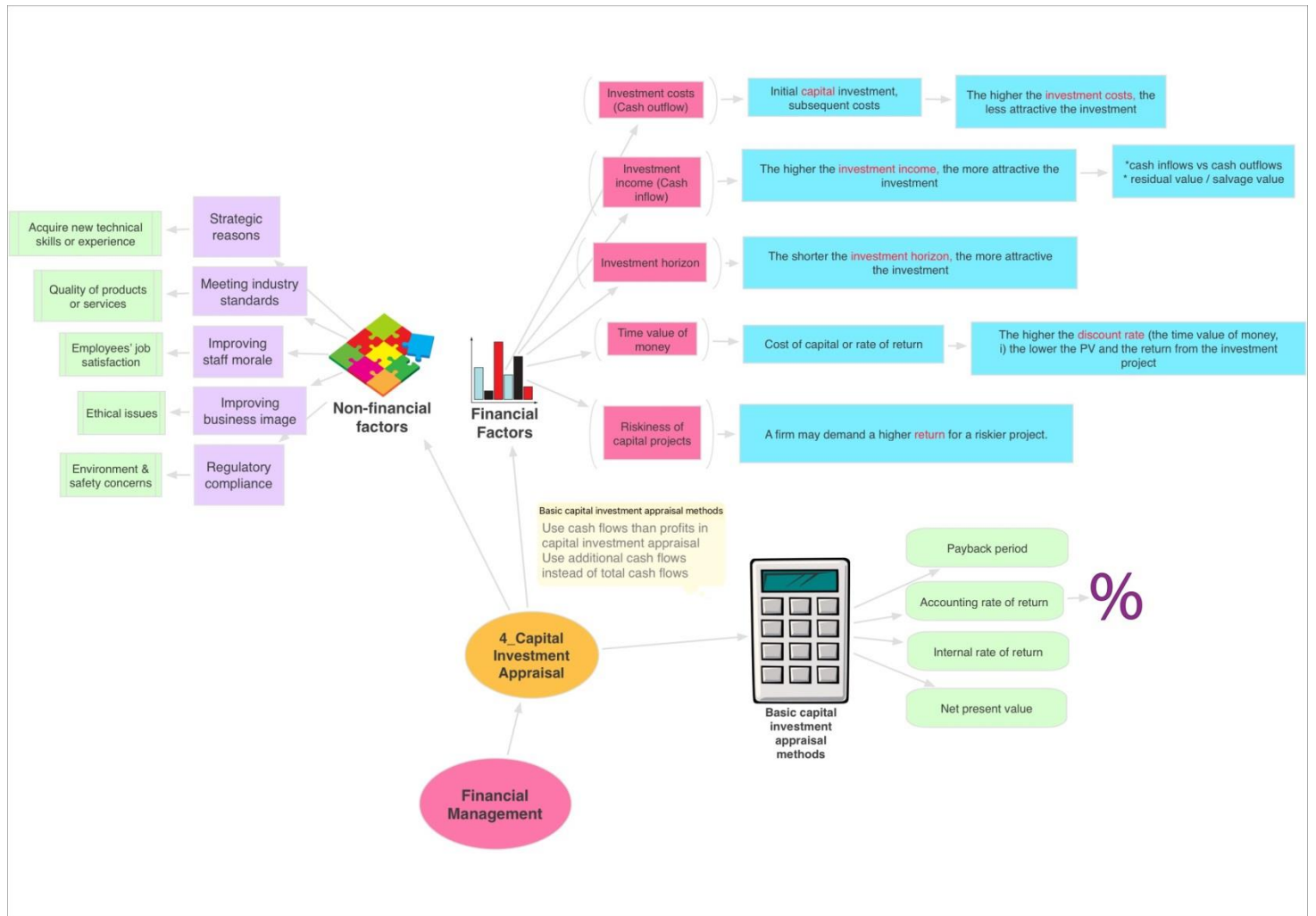
NPV: \$ vs IRR:%

**Rules** A)  $IRR \geq$  required rate of return: accept

B) Mutually exclusive: choose higher IRR

C) Comparison between 4 methods

	Pros	Cons
<b>ARR</b>	<ul style="list-style-type: none"> <li>✓ Easier to use</li> <li>✓ simple calculation(vs IRR/NPV)</li> <li>✓ easy to understand</li> </ul>	<ul style="list-style-type: none"> <li>✓ Profits use instead of cash flow</li> <li>✓ ignore <b>time value of money</b></li> </ul>
<b>Payback period</b>	<ul style="list-style-type: none"> <li>✓ Easier to use</li> <li>✓ Simple calculation</li> <li>✓ Easier to understand(years)</li> <li>✓ Identify riskiness (longer=riskier)</li> <li>✓ Cash for reinvestment +(with shorter period)</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Ignore time value of money</b> (Vs NPV/ IRR)</li> <li>✓ <b>Ignored cash Flows after payback period</b>(VS NRV/IRR)</li> <li>✓ Random and subjective criteria for target</li> </ul>
<b>NPV</b>	<ul style="list-style-type: none"> <li>✓ Most reliable</li> <li>✓ Consider <b>time value of money</b> (Vs ARR and payback period)</li> <li>✓ Considered <b>all cash Flows</b> (Vs payback period ~more comprehensive)</li> <li>✓ Directly linked to firm value</li> </ul>	<ul style="list-style-type: none"> <li>✓ Difficult calculation (estimation of <b>cost of capital/discounted rate</b>)</li> <li>✓ Difficult to understand (no%)</li> </ul>
<b>IRR</b>	<ul style="list-style-type: none"> <li>✓ Consider <b>time value of money</b></li> <li>✓ Considered <b>all cash Flows</b></li> <li>✓ Easy to understand (%)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Difficult calculation( trials errors, assumptions) Or multiple IRR may appear when cash flow change from positive to negative</li> <li>✓ can't reflect actual increase in firm value( vs NPV)</li> </ul>



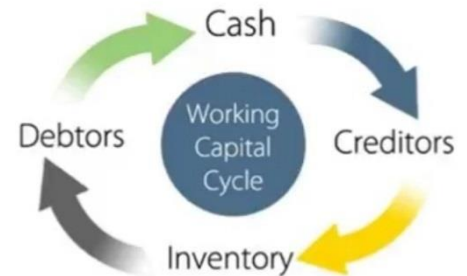
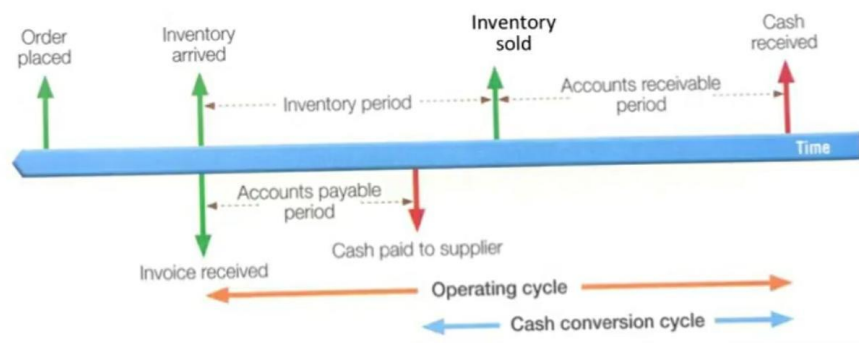
## Chapter 5-working capital management

Working capital Management: simultaneous management of current asset and liabilities

Net working capital = current assets - current liabilities

Cycles: shorter = higher management efficiency & liquidity

### Operating Cycle & Conversion Cycle



### Operating cycle and cash conversion cycle

**Operating cycle**: number of days a firm needs to transform its inventory to cash

**Cash conversion cycle**: period between cash disbursements and cash collection

### A. Cash management cash -collection and disbursement 支出

I. **Goal (holding cash)**: adequate cash for operations at minimum level of idle cash (cost)

**Benefits**: transaction and meet unexpected needs, lower risk of cash shortfall, higher liquidity

**Costs**: can't invest, forgo interest income, lower profitability

### Management of Float

II. **Float lag** between time of cheque being sent by payers and Money being sent by recipient

(because of taking time to deliver by Email and process for banking system - > available to use after clearance)

**Cheque clearance** exchanges of cheque and settlement of cheque payments between banks

**Correction float** [inflow: receive] vs **disbursement float** [outflow: draw]

**payers**: prefer lengthening disbursement float - > much cash for longer time

**recipient**: prefer shortening collection float - > much cash for shorten time.

### III. Principles

**a) speed up cash inflows (receive cash from customers)****shortening collection float**

- ↓delivery time: payment collection centers in Major cities (cut mail delivery)
- ↓clearing time for cheque deposit before daily cut off time at bank

**Encouraging cash payments**

- ↑cash payments [ instant cash and decrease service charges ( credit card operators)]
- Membership card accumulate points for redeeming gifts by paying by cash / octopus
- Express check-out counter for cash purchases

**b) delay cash outflows (as long as not upsetting suppliers)****Higher disbursement float (keep the cash for longer)**

- delivery time↑: disbursement centers in remote cities
- clearing time↑: Friday payment - > cheque can't be deposited and cleared over weekend

**c) match timing & account of cash inflows and outflows**

- **sufficient to meet cash outflows**

**IV. Cash budgeting project for both cash receipts and payments**

- **Cash budge**: foresee future cash balance
- Ending Cash Balance = cash expected to hold at the end of period
- Minimum Cash Balance required = cash desired to hold
- Cash surplus(/deficiency) = ending - minimum(+ =surplus,- =deficiency)

**a) Actions to deal with cash surplus or deficiency**

**Surplus**: invest in marketable securities (MS) -> lower cash Balance ->lower opportunity cost ↓

☆MS-short term investment that can be easily & quickly converted into cash

**Deficit**: additional financing needed eg short term bank loan

**b) Importance**

**Surplus**: plan for short term investment-> more time to analyse project

**Deficit**: plan for short term loan->more time to analyze financial options

**B) account receivable management-formulation of accounts receivable policy( credit policy)****Elements**

- a) Credit standard**- minimum level of credit worthiness of customer to obtain credit from firm to avoid bad debt (A/R uncollectable)

**5Cs**

**capital**: amount & quality of capital Invested by customer in own firm



**capacity:** repayment ability ( cash flow, payment history)

**collateral:** physical/ financial assets -> greater value than loan ->secure

**conditions:** economic environment and intended purpose of loan.

**character:** subjective judgment of customers' character-> trustworthiness of customers (personal history, experiences)

**b) credit terms:** states repayment conditions for purchasing on credit.

**credit period:** time period within which debtor has to settle payment

**cash discount:** discount given to debtor for paying within cash discount period

**Cash discount period:** time period in which debtor has to pay for (<credit period->encourage early payment

**c) Collection policy:** guidelines on actions for collecting overdue A/R before becoming bad debt  
( friendly reminder/ Warning letters/ visiting office/ collection agency/ legal action)

➤ **Lenient Credit policy**

- ✓ **More credit sales with a longer credit period and lower credit standard**
- ✓ Sales increase due to greater payment flexibility
- ✓ More fund tie up in account receivable due to longer collection period
- ✓ Higher debt-collection costs as well as default risk

➤ **Stricter credit policy**

- ✓ **Limited credit sales with a shorter credit period and higher credit standard**
- ✓ Lower collection cost and smaller bad debt loss
- ✓ Sales may get hurt since customers are either denied credit or given small credit

**II. Factors affecting formulation of A/R policy**

	Granting trade credit	Credit standard ↓	Credit period ↑	Credit discount ↑
Sales	↑			Volume ↑
	-Flexible -Settle later->attractive	Easier	Attractive	Attractive (purchasing price -)
Liquidity	↓(pay later)		-	↑(earlier)
Profitability	↓	Uncertain [Sales vs bad debt & opportunity cost]		
	Forgo potential loss	↑	↑	↓
A/R & bad debt	↑			↓

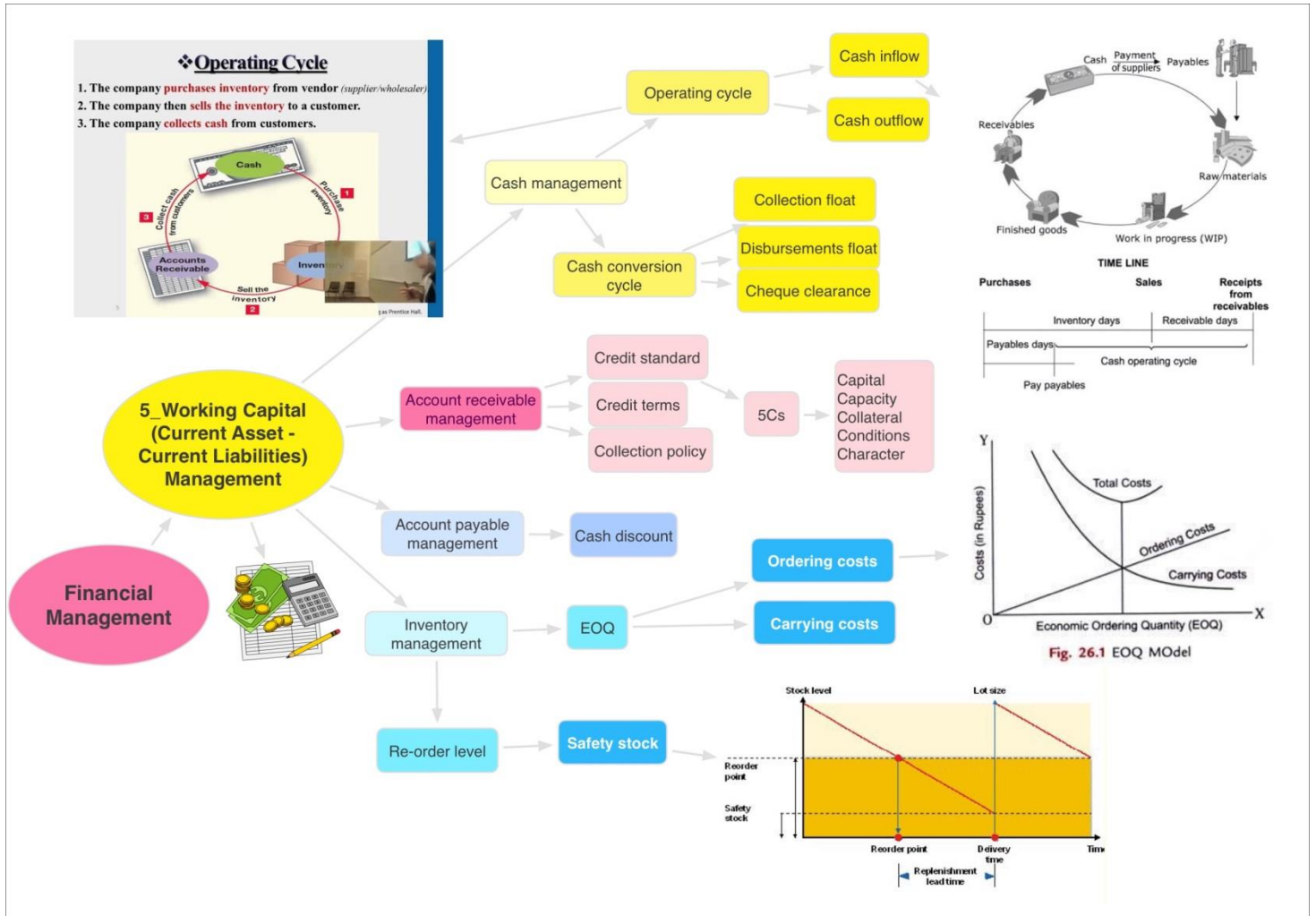
**C) account payable management- formulation of account payment policy [discount: implicit cost]**

☆ **A/P policy:** governs procedure for making credit purchase and repaying A/P

- a) Taking discount (repay earlier): when borrowing rate < annual rate of cash discount
  - Purchasing costs ↓ X loan interest ↑ [need \$ because of lost short term financing] & forgo investment return
- b) giving up discount (keep cash): when borrowing rate > annual rate of cash discount

**D) inventory management: management of raw materials ,work in progress and finished goods**

- ☆a) adequate lv: Unexpected demand to avoid loss of sales( stock depletion and production stoppage)
- ☆b) minimize order (storage), liquidity+



**I. Economic Order Quantity Model (EOQ)**

Finding optimal order quantity to minimize total inventory costs

**Ordering costs** – costs of placing order for inventory from suppliers [per order]  $( F \times \frac{D}{Q} )$

- Eg Shipping cost

**Carrying costs** – costs of holding inventory for certain time period [per unit]  $= C \times \frac{Q}{2}$

☆ storage / insurance / loss [deterioration & obsolescence] / opportunity costs of tying up money

☆  $Q \uparrow$  avg. inventory held  $\uparrow \rightarrow$  annual carrying costs  $\uparrow$

**EOQ** [order Q with min. total inventory cost] : total ordering \$ = total carrying \$

☆  $D$  = Annual Demand,  $F$  = Ordering \$ per order,  $C$  = carrying \$ per unit

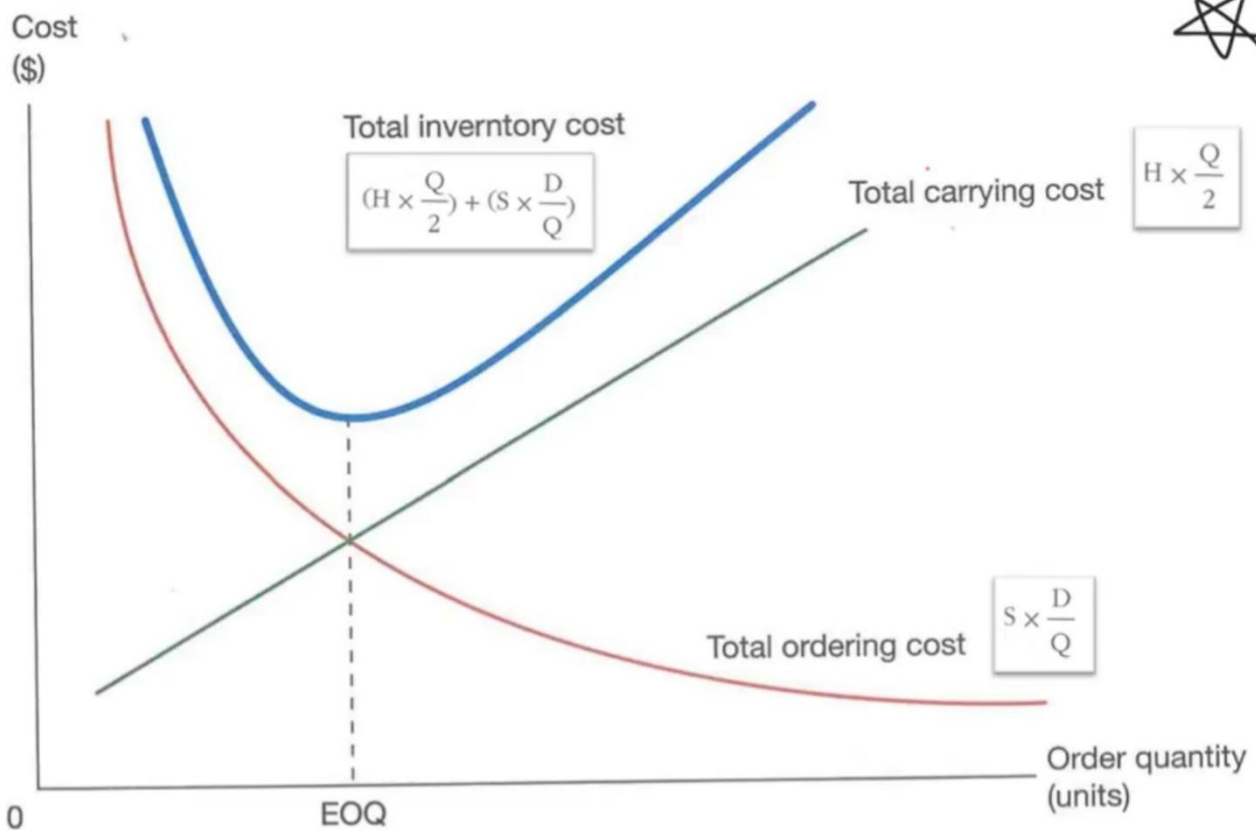
☆ Total Inventory Costs  $= ( F \times \frac{D}{Q} ) + ( C \times \frac{Q}{2} )$

☆  $Q^* = EOQ = \sqrt{\frac{2DF}{C}}$

**II. Re-order level – inventory level at which a firm should restore its inventory**

☆  $= ( \text{Daily Usage} \times \text{No. of Days for Delivery [lead time]} ) + \text{safety stock}$

☆ sales  $\uparrow$ , delay of inventory delivery, production stoppage of inputs



## Chapter 6 Risk Management

### Risk Management- identifying and assessing risk faced by firm, and developing measures to minimize losses

☆ **Risk:** uncertainty of possibility of suffering loss

#### A. Process

- i. **Identifying** ( e.g ratio analysis)
- ii. **Measuring:** lower frequency [probability of loss]  $\approx$  higher severity [extent of loss] e.g tsunami
- iii. **Controlling:** most cost effective measure [ potential loss vs costs of Risk control]

#### B. Types

##### i. Pure vs speculative

a) **pure risk-** only involved possibility of loss or loan loss

- i) **personal:** possibility of illness /injuries /death (e.g. owner / key employee)
  - ii) **property:** possibility of property being damaged / destroyed / stolen (e.g premises, inventory, cash)
  - iii) **liability:** possibility of being legally liable to compensate for damaging ppl's property/injuring ppl
- ☆ [accidents (hospital: medical, phone manufacturer: explosion, construction: industrial)]

b) **Speculative risk-** include the possibilities of loss and gain

e.g. interest rate, exchange rate ,public policy

##### ii. 2. Insurable vs non insurable

#### Insurance - individual or firm transfer risk kr loss to insurance company in exchange for a fee

*Insurance:* losses covered in insurance policy and covered amount

#### Five conditions of insurable risk

- a) **non speculate:** otherwise guaranteed to gain from speculation.
- b) **Accidental and uncontrollable:** no accurate prediction& not intentionally cause by insured.
- c) **Probability of occurrence can be estimated:** predict number of claims and premium to ensure profitability
- d) **Infrequent and significant enough loss:** otherwise administrative costs > Premium income
- e) **Acceptable number of insured at same time:** otherwise unaffordable to compensate(war)

### C. controlling[ factor to consider :cost of control , balance of strategies]

#### i. Risk avoidance :eliminating risk of loss[non engaged]

Loss frequency-

Loss Resort: always not taking risk->profitability-

#### ii. Risk reduction- reducing risk of loss( education and training)

Loss prevention: frequency-

Loss reduction: severity-(fire-> fire automatic sprinkler system to reduce damage)

#### iii. Risk assumption -baring risk of loss[ set aside an amount to cover potential losses]

·self-insured

·won't affect loss frequency/severity

- Foreign insignificant and bearable losses without other strategies-> a necessary cost of Risk control-

#### iv. Risk transfer: transferring risk or loss to another party[ insurance, contract]

Eg: hold harmless provision

### D. company available insurance for business

#### a) Motor insurance: protect drivers and third parties Against losses from car thefts & accident

i. Third Party Insurance for auto mobile: compensation for damages of third parties

ii. Comprehensive insurance=1+ damages of insured own vehicle

#### b) Fidelity guarantee insurance: compensate employer for loss due to dishonest employees

Eg: cashiers: handle much money → probably for fraud / theft

#### c) Library insurance

i. public library insurance: compensation for damages to public

ii. employees compensation insurance: compensation for injuries/death of employees at work

