



品职教育

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# Corporate Finance

## 2015CFA一级知识框架图



# Reading 36

## Capital Budgeting

# Capital budgeting

## 基本过程

- Idea generation
- Analyzing project proposals
- Create capital budget
- Monitoring decisions and conducting a post-audit

常见  
项目



## Capital projects

Replacement projects  
Expansion projects  
Mandatory investment  
Other projects

↓ Basic principles ★ ★

•based on Cash flows →

Incremental cash flows  
Ignore: Sunk costs & Financing costs  
Include: Externalities (Cannibalization) & Opportunity costs

- timing of cash flows is important
- Cash flow are analyzed on an after tax basis
- Financing costs are reflect in the project's required rate of return

↓ 有限资本下选择project

## Capital Rationing

Independent Projects

Mutually Exclusive Projects

# Project Evaluation Methods ★ ★

选择方法	公式	筛选	Advantage	Disadvantage
<b>NPV</b> ★	$NPV = CF_0 + \frac{CF_1}{(1+k)^1} + \frac{CF_2}{(1+k)^2} + \dots + \frac{CF_n}{(1+k)^n}$	NPV>0	<ul style="list-style-type: none"> <li>• Shows gains as currency amount</li> <li>• +NPV adds value to the firm rather than creditors.</li> <li>• Included opportunity cost</li> </ul>	<ul style="list-style-type: none"> <li>• Size of projects ignored</li> </ul>
<b>IRR</b> ★	$CF_0 + \frac{CF_1}{(1+IRR)^1} + \frac{CF_2}{(1+IRR)^2} + \dots + \frac{CF_n}{(1+IRR)^n} = 0$	Re<IRR	<ul style="list-style-type: none"> <li>• Reflect the % profitability</li> </ul>	<ul style="list-style-type: none"> <li>• Reinvestment at IRR</li> <li>• No IRR &amp; multiple IRR</li> <li>• Conflicting ranking results with NPV</li> </ul>
<b>PBP</b>	PBP=full year until recovery+(unrecovered cost/cash flow)	互斥: 最短PBP 独立: <benchmark PBP	<ul style="list-style-type: none"> <li>• Simple</li> <li>• An indication of a project's risk and liquidity</li> </ul>	<ul style="list-style-type: none"> <li>• Ignores time value of money</li> <li>• Ignores cash flows after the payback period</li> <li>• Ignores project profitability</li> </ul>

选择方法	公式	筛选	Advantage	Disadvantage
<b>DBP</b>	the number of years it takes for the cumulative discounted cash flows from a project to equal the original investment	互斥：最短DBP 独立：<benchmark DBP	<ul style="list-style-type: none"> <li>• An indication of a project's risk and liquidity</li> <li>• Considers time value of money</li> </ul>	<ul style="list-style-type: none"> <li>• Ignores cash flows after the payback period</li> </ul>
<b>PI</b>	$PI = \frac{PV \text{ of future cash folow}}{CF_0} = 1 + \frac{NPV}{CF_0}$	PI > 1.0	<ul style="list-style-type: none"> <li>• Measures profitability of the project</li> </ul>	<ul style="list-style-type: none"> <li>• Not reflect the absolute amount of profit gain of the project</li> </ul>

**NPV is superior to IRR** → 不同类型公司选择项目决策方法有偏好，了解

# Reading 37

**Cost of Capital**

## 1. After-Tax Cost of Debt

$K_d (1-t)$  = interest rate – tax saving

Use the **market interest rate, not coupon rate**



Yield to maturity approach  
Debt-rating approach

## 2. Cost of Preferred Stock



$$k_{ps} = \frac{D_{ps}}{P}$$

### 3. Cost of Equity ★ ★ ★

#### CAPM approach

$$k_s = r_f + \beta(r_m - r_f)$$

估计非上市  
公司β ★

去杠杆  $\beta_{asset}^* = \beta_{equity} \left[ \frac{1}{1 + (1-t) \frac{D}{E}} \right]$

加杠杆  $\beta_{equity} = \beta_{asset}^* \left[ 1 + (1-t) \frac{D}{E} \right]$

Country equity risk premium

CRP =

Sovereign yield spread  $\times \left( \frac{\text{Annualized standard deviation of equity index of developing country}}{\text{Annualized standard deviation of sovereign bond market in terms of the developing market currency}} \right)$

$$K_{ce} = R_f + \beta[E(R_{mkt}) - R_f + CRP]$$

#### Gordon growth model

$$P_0 = D_1 / (K_{ce} - g)$$

#### Bond Yield Plus Risk Premium Approach

$$k_{ce} = \text{bond yield} + \text{risk premium}$$



$$WACC = (w_d)[k_d(1-t)] + (w_{ps})(k_{ps}) + (w_{ce})(k_s)$$



应该用project risk  
对应的折现率★ →

If a project's risk > firm's risk → NPV overestimated if using WACC

If a project's risk < firm's risk → NPV underestimated if using WACC



衡量其他成本

### Marginal Cost of Capital (MCC)

Break point =  $\frac{\text{amount of capital at which the component's cost of capital changes}}{\text{weight of the component in the capital structure}}$

### Flotation Cost

$$r_e = \frac{D_1}{P_0 - F} + g \quad \text{or} \quad \text{floatation costs are a cash flow at the initiation of the project consider as CF0}$$

# Reading 38

Measures of leverage

## Leverage 基本概念

Leverage

Operating leverage → fixed operating cost → **Business risk**  
 Financial leverage → debt financing → **Financial risk**

Sales risk  
 Operating risk

常见 leverage ★★ 计算

杠杆	定义	计算
<b>DOL</b>	$DOL = \frac{\text{percentage change in EBIT}}{\text{percentage change in sales}} = \frac{\frac{\Delta EBIT}{EBIT}}{\frac{\Delta Q}{Q}}$	$DOL = \frac{Q(P - VC)}{Q(P - VC) - FC} = \frac{S - TVC}{S - TVC - FC}$
<b>DFL</b>	$DFL = \frac{\text{percentage change in EPS}}{\text{percentage change in EBIT}} = \frac{\frac{\Delta EPS}{EPS}}{\frac{\Delta EBIT}{EBIT}}$	$DFL = \frac{EBIT}{EBIT - Interest}$
<b>DTL</b>	$DTL = DOL \times DFL$ $DTL = \frac{\% \Delta EBIT}{\% \Delta sales} \times \frac{\% \Delta EPS}{\% \Delta EBIT} = \frac{\% \Delta EPS}{\% \Delta sales}$	$DTL = \frac{Q(P - VC)}{Q(P - VC) - FC - I} = \frac{S - TVC}{S - TVC - FC - I}$

Breakeven  
 Analysis ★★

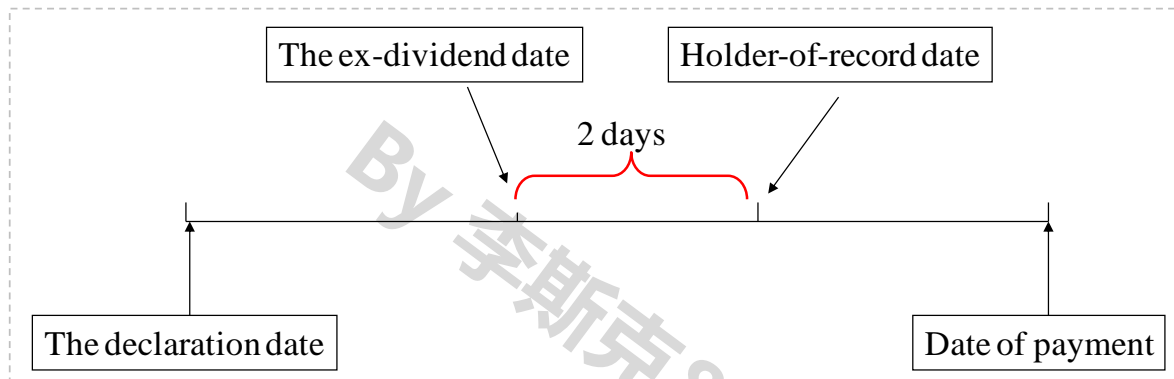


$$Q_{BE} = \frac{\text{fixed operating costs} + \text{fixed financial costs}}{\text{Price} - \text{Variable cost per unit}}$$

# Reading 39

## Dividends and Share Repurchases: Basics

## Dividend Payment Chronology



常见分红及影响★★★→区分变大变小

Indicator	Cash div.	Stock div.	Stock split	Repurchase
No. of shares	No changes	Increase	Increase	Decrease
Stock price	Ex-div	Ex-div (pro-rata)	Pro-rata decrease	Increased if signal is positive
EPS	No change	Decrease	Decrease	Uncertain★★区分
P/E	Decrease	No change	No change	Uncertain
Market value	Decrease by cash paid	No change	No change	Decreased by cash paid
Share owned by individual	No changes	Increase	Increase	Depends
Ownership value	Decrease in value but same in % of ownership	No changes	No change	Increase

# Reading 40

**Working Capital Management**

## Liquidity measures

概念

Primary sources of liquidity → 正常流动性来源

Secondary sources of liquidity → 影响公司发展

Working capital

Inventory

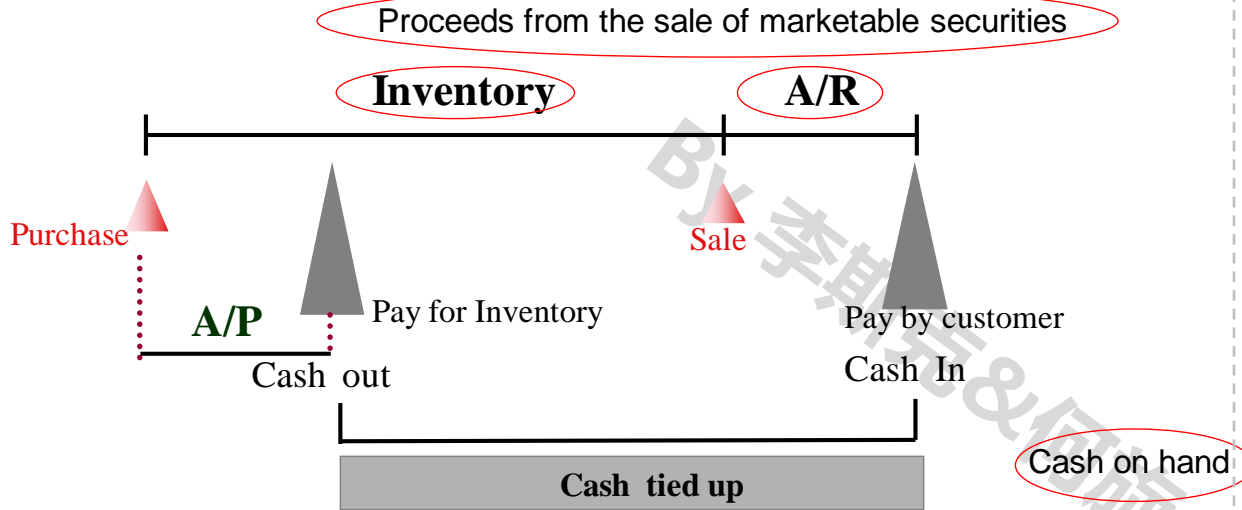
Accounts  
Receivable

Accounts  
Payable

Cash

Current Assets less Current Liabilities = Net Working Capital

## Working Capital Turnover



- **Drags on liquidity:** when receipts lag, creating pressure from the decreased available funds.
- **Pulls on liquidity:** disbursements are paid too quickly or trade credit availability is limited, requiring companies to expand fund before the sales fund comes to cover the liability.



Liquidity ratios★	公式
Current ratio	$\text{current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$
Quick ratio	$\text{quick ratio} = \frac{\text{cash} + \text{short-term marketable securities} + \text{receivables}}{\text{current liabilities}}$
Cash ratio	$\text{cash ratio} = \frac{\text{cash} + \text{short-term marketable securities}}{\text{current liabilities}}$
Receivable turnover	$\text{receivables turnover} = \frac{\text{credit sales}}{\text{average receivables}}$
No. of days receivable	$\text{number of days receivable} = \frac{365}{\text{receivable turnover}}$

Liquidity ratios★	公式
Inventory turnover	inventory turnover= $\frac{\text{cost of goods sold}}{\text{average inventory}}$
No. of days inventory	number of days inventory= $\frac{365}{\text{inventory turnover}}$
Payables turnover	payables turnover ratio= $\frac{\text{purchases}}{\text{average trade payables}}$
No. of days payable	number of days of payables= $\frac{365}{\text{payables turnover ratio}}$
Operating cycle	Operating cycle=days of inventory + days of receivable
Cash conversion cycle	Cash conversion cycle=days of inventory + days of receivable-days of payable

## WC Management

WC Management	管理方法	
<b>Inventory management</b>	<ul style="list-style-type: none"> <li>• Calculating Average days of inventory and Inventory turnover ratios</li> <li>• Make comparison Within the same industry and business strategies</li> </ul>	
<b>Payable Management</b>	<p>Term s of “2/10 net 60”→计算★</p> $\text{cost of trade credit} = \left(1 + \frac{\text{discount}}{1 - \text{discount}}\right)^{365/t} - 1$	
<b>Cash Management</b> →计算★	percentage discount from face value	$\% \text{discount} = \left(\frac{\text{FV} - \text{P}}{\text{FV}}\right)$
	discount-basis yield	$\text{discount basis yield} = \left(\frac{\text{FV} - \text{P}}{\text{FV}}\right) \left(\frac{360}{t}\right)$ $= \% \text{ discount} \times \left(\frac{360}{t}\right)$
	The money market yield	$R_{\text{mm}} = \left(\frac{\text{F} - \text{P}}{\text{P}}\right) \left(\frac{360}{t}\right) = \text{HPR} \times \left(\frac{360}{t}\right)$
	The bond equivalent yield	$\text{BEY} = \left(\frac{\text{F} - \text{P}}{\text{P}}\right) \left(\frac{365}{t}\right) = \text{HPR} \times \left(\frac{365}{t}\right)$

## Short Term Funding

The risk short-term investment →

- Credit risk
- Market risk

- Liquidity risk
- Foreign exchange risk

### Sources of Short-term Funding

Source	Definition
from Banks	
Lines of credit	<ul style="list-style-type: none"><li>• <b>Uncommitted Line of credit:</b> bank may refuse to extend an offer of credit</li><li>• <b>Committed Line of credit:</b> bank charges a fee for making a commitment for short term lending, more reliable</li><li>• <b>A revolving line of credit:</b> a commitment for longer term lending, more reliable than Committed term lending</li></ul>
collateral for borrowings	Pledge assets as collateral for bank borrowings
Banker's acceptances	mainly used by firms that export goods, who get guarantee from the buyer's bank
Factoring	sale A/R to bank
Non-Bank Sources → Expensive for smaller firms	
Commercial paper	Large and creditworthy companies can issue short-term debt securities

# Reading 41

**The Corporate Governance of Listed Companies: A Manual for Investors**

## Corporate governance → 解决 A principal-agent problem

### Corporate governance

- The system of internal controls, processes, and procedures by which individual Companies are managed
- Provides a framework that defines the rights, roles and responsibilities of management, the board of directors, and shareholders within an organization.

### potential conflicts

#### Managers and shareholders

Management may act for their own interests rather than those of shareholders

#### Directors and shareholders

- Directors should help ensure that management is acting in shareholders' best interest.
- Directors may align more with management interests rather than those of shareholders

#### Corporate Governance 内容框架

- Board of directors
- Management
- Shareholder rights



- Independence & Qualification
- Board committees

**Independence**

→了解独立性相关规定

- A majority of the board of directors is comprised of independent members (not management).
- The board meets regularly outside the presence of management.
- Board members are not closely aligned with a firm supplier, customer, share-option plan or pension adviser.
- Segregation of duty – the chairman of the board is not the CEO or former CEO of the firm
- Independent board members have a primary or leading board member in cases where the chairman is not independent
- Considering the Frequency of Board Elections
- Considering other policies to ensure independence

**Qualification**

→了解胜任性相关规定

- When considering the qualifications of board members, consider whether board members:
  - Can make informed decisions about the firm's future.
  - Can act with care and competence as a result of their experience with:
    - Technologies, products, services which the firm offers.
    - Financial operations and accounting and auditing topics.
    - Legal issues.
    - Strategies, planning.
    - Business risks the firm faces.
- Have necessary experience and qualifications
- Have other board experience.

## Board committee构成



Audit committee

Remuneration / Compensation committee

Nominations Committee

## Shareholder rights



### Voting rules



Proxy voting

Confidential Voting

Cumulative Voting

Voting for other corporate Changes

### Shareowner Proposals



Shareowner-Sponsored Board Nominations

Shareowner-Sponsored Resolutions

Advisory or Binding Shareowner Proposals

Shareowner Legal Rights

### Takeover Defenses



Golden parachutes

Poison pills

Greenmail





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