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Corporate Finance

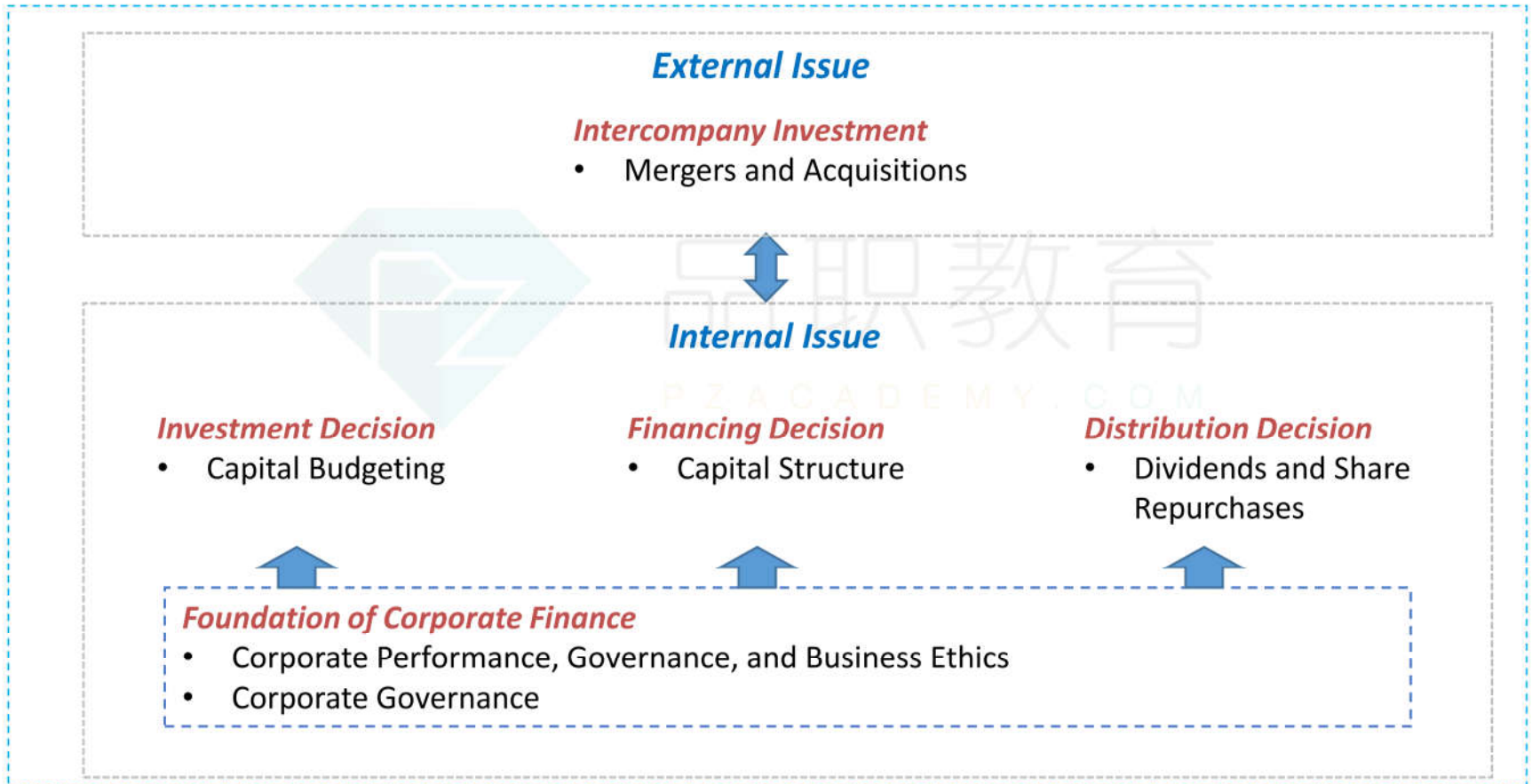
2017 CFA二级知识框架图



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Framework Of Corporate Finance





Reading 21



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

了解inflation影响

If inflation is higher than expected,
•profitability is lower than expected.
•reduces the real tax savings of depreciation.
•NPV underestimated
•increases the corporation's real taxes
•decreases the value of bondholders.

↓ 有限资本下选择project

Capital Rationing

Independent Projects

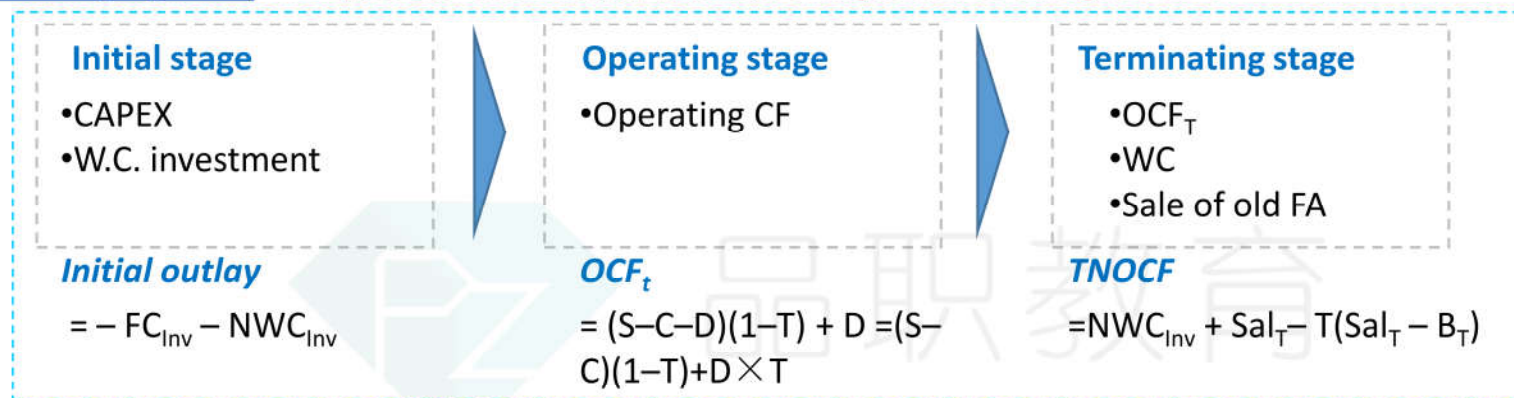
Mutually Exclusive Projects

常见project分析 ★★

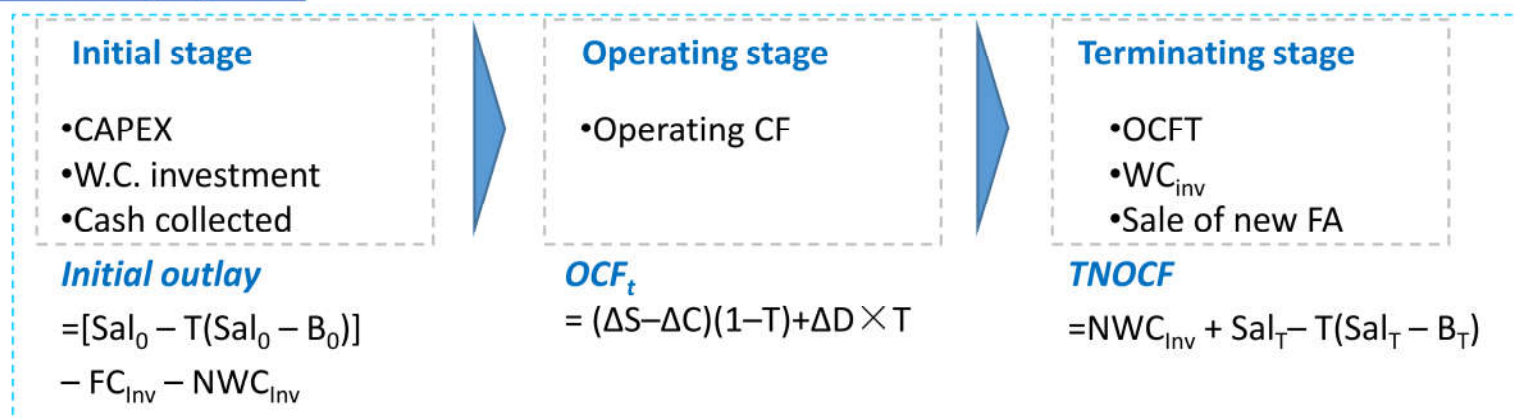
计算

Expansion project

Dep处理: MACRS折旧会查表 → higher ATCF & higher NPV



Replacement project



Mutually exclusive projects with different lives ★ ★

- Least common multiple of lives approach
- Equivalent annual annuity (EAA) approach

Capital
rationing

Hard capital rationing
Soft capital rationing

计算

Risk Analysis 计算

- Sensitivity analysis
- Scenario analysis
- Monte Carlo simulation

风险
体现

Discount
rate ★

$$R_{project} = R_f + \beta_{project} [E(R_M) - R_f]$$

risk-adjusted rate rather than WACC

project's risk > company's risk → **overestimate** the NPV
Project's risk < company's risk → **underestimate** the NPV

Projects With Real Options ★

- Timing options
- Sizing options
 - **Abandonment option**: Similar to **put options**
 - **Expansion option**: Similar to **call options**
- Flexibility options
 - **Price-setting options & Production flexibility options**
- Fundamental options

计算

→ overall NPV = project NPV (based on DCF) +
option value - option cost

Other Valuation Models

Economic income Vs. Accounting income

Economic income	Accounting income
Economic income = ATCF + ΔMV	Accounting income = revenue – expense
Economic depreciation: the decrease in MV of investment	Accounting depreciation: the decrease in BV based on the original cost
Financing cost: ignored	Financing cost: subtracted to arrived at NI

Economic profit approach

Economic profit (EP) = NOPAT - \$WACC = EBIT x (1-T) - WACC x capital

$$NPV = MVA = \sum_{t=1}^{\infty} \frac{EP_t}{(1+WACC)^t}$$

$$V_{firm} = MVA + investment$$

计算,同equity, 注意叫法不同

Residual income approach

$$RI_t = NI_t - r_e B_{t-1}$$

$$NPV = \sum_{t=1}^{\infty} \frac{RI_t}{(1+r_e)^t}$$

$$V_E = NPV + BV_E$$

Claims valuation approach

$$EV = FCFCreditors + FCFE$$



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CAPITAL STRUCTURE

Capital Structure

Capital Structure Objective

- minimize the firm's WACC
- maximize the firm's value
- not maximum EPS or ROE



Capital Structure Theory ★

掌握资本结构理论



- **MM's proposition**

- No tax: irrelevant
- With tax: tax shield makes borrowing valuable, WACC is minimized at 100% debt

	Without taxes	With taxes
Proposition 1	$V_L = V_U$	$V_L = V_U + t \times D$
Proposition 2	$r_e = r_0 + (r_0 - r_d) \times D/E$ $V = EBIT/r_0$	$r_e = r_0 + (r_0 - r_d)(1-t) \times D/E$ $V = EBIT(1-t)/r_0$

- **Static trade-off theory:** Increasing the use of debt also increases the costs of financial distress. At some point, the costs of financial distress will exceed the tax benefits of debt.
 - optimal proportion of debt
 - Costs Of Financial Distress
 - Agency Costs
- **Pecking order theory:** managers prefer to make financing choices that are least likely to send signals to investors. Pecking order (most favored to least favored) is:
 - Internally generated equity (i.e., retained earnings).
 - Debt
 - External equity (i.e., newly issued shares).

Practical Issues In Capital Structure Policy

掌握结论

Country-specific factors	Use of Total Debt	Debt Maturity
<i>Institutional and Legal Factors</i>		
Strong legal system	lower	longer
Less Information asymmetry	lower	longer
Favorable tax rates on equity	lower	N/A
Common law as opposed to civil law	lower	longer
<i>Financial Market Factors</i>		
More liquid stock and bond markets	N/A	longer
Greater reliance on banking system	higher	N/A
large institutional investors	lower	longer
<i>Macroeconomic environment</i>		
Higher inflation	lower	shorter
Higher GDP growth	lower	longer

Reading 23

DIVIDENDS AND SHARE REPURCHASES

Dividend Policy

Theories In Dividend Policy

- Dividend policy does not matter → **MM theory**
- Dividend policy matters: Bird in hand argument
- Dividend policy matters: Tax aversion
- Clientele effect → 计算★
- Signaling
- Agency issues

Clientele effect

- **Tax consideration**: If $T_{CG} < T_D$, investor prefers capital gains.
- **Requirements of institutional investors**: some **institutional** investors will invest **only** in companies that **pay a dividend** or have a dividend yield above some target threshold.
- **Individual investor preferences**: Some investors prefer to buy stocks to **spend** the **dividends** while **preserving** the **principal**.

↓ Tax effects the trading strategies

- **Sell just before ex-dividend**: $P_w - (P_w - P_b)T_{CG}$
- **Sell just after ex-dividend**: $P_x - (P_x - P_b)T_{CG} + D(1 - T_D)$
- **Indifferent about selling just before and after it goes ex-dividend**:
 - $P_w - (P_w - P_b)T_{CG} = P_x - (P_x - P_b)T_{CG} + D(1 - T_D)$
 - $\Delta P = P_w - P_x = D(1 - T_D) / (1 - T_{CG})$

掌握各个理论的影响

Factors Affecting Dividend ★

- Investment opportunities
- Expected volatility of future earnings
- Financial flexibility
- Tax considerations ★展开
- Flotation costs
- Contractual and legal restrictions

Effective tax rate

- Double-taxation
 - Effective tax rate = $1 \times \text{corporate tax rate} + (1 - \text{corporate tax rate}) \times (\text{individual tax rate})$
- Split-tax rate system
 - Corporate earnings as *dividends* are *taxed at a lower rate* at the corporate level than *retained earnings*
- Tax-imputation system
 - *Effective tax rate = shareholder's marginal tax rate*

掌握各因素如何影响分红

↓ 概念, 计算

Dividend Policies ★★

- Stable dividend policy
- Constant dividend payout ratio policy
- Residual dividend policy

→ Rationales for share repurchase 概念

- Tax advantages: TD > TCG, share repurchase have tax advantage over cash dividends.
- Share price support/signaling;
- Added flexibility
 - share repurchases are not a long-term commitment.
 - managers have discretion over "market timing" repurchases.
- Offsetting dilution from employee stock options;
- Increase financial leverage



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MERGERS AND ACQUISITIONS

Basic Concept of M&A

并购基本概念

概念

Types of mergers

horizontal merger
vertical merger
conglomerate merger



Forms of integration

- a statutory merger
 - $\rightarrow A + B = A$
- a subsidiary merger
 - $\rightarrow A + B = A + B$
- a consolidation
 - $\rightarrow A + B = C$



Merger motivations

- Synergies
- Achieving more rapid growth
- Increasing market power
- Unique capabilities and resources
- Diversification
- Bootstrapping earnings ★定义→高P/E公司收购低P/E公司
- Personal benefits for managers
- Tax benefits
- Unlocking hidden value
- Achieving international business goals

不同生命周期阶段并购目的

Life cycle	Industry characteristics	Motivations	Types of mergers
Pioneering development	<ul style="list-style-type: none"> Substantial development cost; Low, slowly increasing sales growth 	<ul style="list-style-type: none"> Sell to larger and mature company; Young firms merge to pool resources 	<ul style="list-style-type: none"> Conglomerate, Horizontal
Rapid accelerating growth	<ul style="list-style-type: none"> High profit margins caused by few participants in the market 	<ul style="list-style-type: none"> Large capital required to expand capacity to grow 	<ul style="list-style-type: none"> Conglomerate, Horizontal
Mature growth	<ul style="list-style-type: none"> Drop in the entry of new competition, still have growth potential 	<ul style="list-style-type: none"> To achieve economies of scale/synergies, and operational efficiencies 	<ul style="list-style-type: none"> Vertical, Horizontal
Stabilization and market mature	<ul style="list-style-type: none"> Increasing competition; capacity constraints 	<ul style="list-style-type: none"> Economies of scale to match the low cost and price performance of other companies Large firms acquire small firms to improve management and reach a broader financial base 	<ul style="list-style-type: none"> Horizontal
Deceleration and decline	<ul style="list-style-type: none"> Over capacity, Eroding profit margin 	<ul style="list-style-type: none"> Horizontal merger to survive; Vertical to increase efficiency and profit merge to exploit synergy May acquirer target in young industry 	<ul style="list-style-type: none"> Conglomerate, Horizontal Vertical

Form of acquisition ★ ★

掌握区别

Major Differences of Stock versus Asset Purchases		
	Stock purchase	Asset purchase
Payment	<ul style="list-style-type: none"> Made directly to target company shareholders in exchange for their shares 	<ul style="list-style-type: none"> Made directly to target company
Approval	<ul style="list-style-type: none"> Majority shareholder approval required 	<ul style="list-style-type: none"> No shareholder approval needed unless asset sale is substantial
Tax: corporate	<ul style="list-style-type: none"> No corporate level tax 	<ul style="list-style-type: none"> Target company pays capital gains taxes
Tax: shareholder	<ul style="list-style-type: none"> Shareholders of target pay capital gain tax 	<ul style="list-style-type: none"> No direct tax consequence for target company's shareholders
Liabilities of target	<ul style="list-style-type: none"> Acquirers assumes liabilities of target 	<ul style="list-style-type: none"> Acquirer usually avoids assumption of target's liability



Method of payment

securities offering
cash offering

如何选择支付方式★

risk and reward
Relative valuations
Changes in capital structure

Attitude of target management★★★

掌握定义



Pre-Offer Takeover Defense★★★

poison pill	Flip-in pill: target shareholders have right to buy shares at a discount→最有效 Flip-over pill: target shareholders have right to buy acquirer's shares at a discount; Dead hand provision
poison put	it allows bondholders to put the bonds to the target
takeover laws	seek to reincorporate in a state that has enacted strict anti-takeover laws.
staggered board	It delays the control of boards by acquiring company due to freeze of election of most of board members in the coming future
restricted voting rights	Restricts who have recently acquired large blocks of stock from voting their shares
supermajority voting provision for mergers	Requires shareholder support in excess of a simple majority
fair price amendment	disallow mergers for which the offer is below a certain threshold
golden parachutes	Allows target senior management to receive lucrative payouts if leave

Post-offer defense mechanisms★★

“just say no” defense	target management lobbies the BOD and shareholders to decline and build a case for why the offer is not in the shareholders’ best interests
Litigation	File a lawsuit against the acquirer based on alleged violation of securities or antitrust law.
Greenmail	An agreement that allows the target to repurchase its own shares back from the acquiring company <u>at a premium to the market price</u>
share repurchase	submit a tender offer for its own shares.
leveraged recapitalization	Repurchase of shares with assumption of a large amount of debt
crown jewel defense	Target sells off assets to party upon announcement of taking-over
Pac-man defense	Offer to acquire the acquiring company
White knight defense	The target company to seek a third party to acquire the target
White squire defense	The target seeks a friendly-party to buy a substantial minority stake the target

↓ Antitrust law 计算HHI,判断并购是否能发生★

Post-merger HHI	Concentration	Change in HHI	Government action
HHI < 1,000	Not concentrated	Any amount	No action
1,000 < HHI < 1,800	Moderately concentrated	100 or more	Possible challenge
HHI > 1,800	Highly concentrated	50 or more	Challenge

Valuing a target company★ ★

方法		优缺点
discounted cash flow analysis	•Advantages	<ul style="list-style-type: none"> •easy to model any changes; •forecasts of fundamental conditions in the future rather than on current date •The model is easy to customize
	•Disadvantages	<ul style="list-style-type: none"> •Model is difficult to apply when FCF is negative; •Estimates of cash flows and earnings are subject to error; •Discount rate changes over time; •Estimation is a major concern
comparable company analysis	•Advantages	<ul style="list-style-type: none"> •data is easy to access •Assumption that similar asset has similar value is fundamentally sound • Estimates derived directly from the market, rather than from assumptions
	•Disadvantages	<ul style="list-style-type: none"> •the approach assumes the market's valuation is accurate •An appropriate takeover premium must be determined. •Synergies and capital structures are difficult to analyze •The takeover premium may not be timely.

方法		优缺点
comparable transaction analysis	•Advantages	<ul style="list-style-type: none"> •no need to estimate a takeover premium •Estimates derive directly from recent prices for actual deals •Low lawsuit risk against target's managers and BOD by shareholders.
	•Disadvantages	<ul style="list-style-type: none"> •Assumes the market valued the past transactions accurately •There may not be enough comparable transactions; •Difficult to incorporate merger synergies or changing capital structures into analysis

Evaluating a merger bid ★ ★

计算，掌握书上例题即可

Corporate Restructuring

Post-Merger Value of an Acquirer

$$V_{AT} = V_A + V_T + S - C$$

V_{AT} = post-merger value

V_A = pre-merger value of acquirer

V_T = pre-merger value of target

S = synergies created by the merger

C = cash paid to target shareholders

Gains Accrued to the Target

$$Gain_T = TP = P_T - V_T$$

$Gain_T$ = gains accrued to target shareholders

TP = takeover premium

P_T = price paid for target

V_T = pre-merger value of target

Gains Accrued to the Acquirer

$$Gain_A = S - TP = S - (P_T - V_T)$$

$Gain_A$ = gains accrued to the acquirer shareholders

Equity carve-outs → **inflow of cash** to the parent company

→ **Spin-offs**

Split-offs

Liquidations

↓ **重组原因**

Change in strategic focus

Poor fit

Reverse synergy

Financial or CF needs

Reading 24

CORPORATE PERFORMANCE, GOVERNANCE, AND
BUSINESS ETHICS

Corporate Governance

Stakeholders of a company

	Classification	Interests and Concerns
Internal Stakeholders	<ul style="list-style-type: none">• Stockholders• Employees• Managers• Board members	<ul style="list-style-type: none">• Maximize the return on their investment• Salary, job satisfaction, etc.
External Stakeholders	<ul style="list-style-type: none">• Customers• Suppliers• Creditors• Governments• Unions• Local communities• General public	<ul style="list-style-type: none">• Reliable products• Revenues and dependable buyers• Receive principle and interest on time• Companies to obey the rules• Union members' benefit• Responsible citizens• The quality of life will be improved

customers, employees, and stockholders最重要

principal-agent problem

Potential conflicts between	Details
managers and shareholders	<ul style="list-style-type: none"> •Using funds to expand the size of the firm (empire building). •Granting excessive compensation and perquisites. •Investing in risky ventures. •Not taking enough risk.
Directors and shareholders	<ul style="list-style-type: none"> •Lack of independence. •Board members have personal relationships with management. •Board members have consulting or other business agreements with the firm. •Interlinked boards. •Directors are overcompensated.

↓
不良行为来源→概念

- Self-dealing
- Information manipulation
- Anticompetitive behavior
- Opportunistic exploitation
- Substandard working conditions
- Environmental degradation
- Corruption

↓
关于Ethics的发展→了解

- The Friedman Doctrine
- Utilitarian and Kantian Ethics
- Rights Theories
- Justice Theories



Reading 25



CORPORATE GOVERNANCE

Corporate Governance

Corporate governance 定义

两个目标



- Eliminate or reduce conflicts of interest
- Use the company's assets in a manner consistent with the best interests of investors and other stakeholders

核心作用



Three major business forms

概念，掌握区别

Sole proprietorships	<ul style="list-style-type: none">• Conflicts between management and owners don't exist,• Conflicts of interest involve creditors and suppliers
Partnerships	<ul style="list-style-type: none">• Conflicts also involve creditors and suppliers.• creating partnership contracts that delineate the roles and responsibilities
Corporation	<ul style="list-style-type: none">• Advantages:<ul style="list-style-type: none">• Easier to raise large amounts of capital.• Owners need not to be an expert• Ownership stakes transferable.• Limited liability.• Disadvantage:<ul style="list-style-type: none">• difficulty monitoring a firm's operations• potential for conflicts between management and shareholders

board of directors

Responsibilities

Evaluate
effectiveness of BOD

- Board composition and independence;
- Independent chairman of the board;
- Qualification of directors;
- Annual election of directors;
- Annual self-assessment;
- Separate sessions of independent directors;
- 3 committees (audit, nominating and compensation);
- Independent or expert legal counsel;
- Statement of policies;
- Disclosure and transparency;
- Insider or related party transactions;
- Shareholder proxy votes;

各项具体展开，了解概念

ESG factors产生的risk

Legislative and Regulatory Risk
Legal risk
Reputational Risk
Operating Risk
Financial Risk

*Thank
You!*

