CFA一级知识框架图
Equity

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GOLDEN FUTURE

Framework

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Market Organization and Structure

The Main Functions of the Financial System

功能	➢ Fulfill different entities' requirements ● Save and borrow money ● Raise equity capital ● Manage risks ● Trade assets currently or in the future ● Trade based on their estimates of asset values
	➢ Determine interest rates ● Determine the returns that equate the total supply of savings with the total demand for borrowing
	➢ Capital allocation efficiency

Classification of Assets

分类	Financial Assets	Securities	Fixed income securities	Bonds; notes; bills; commercial paper; certificates of deposit; repurchase agreements; convertible debt.
			Equity securities	Common stock; preferred stock; warrants.
			Pooled investment vehicles	Mutual funds; ETFs; ABS; hedge funds.
		Currency		
		Contract	Forward; futures; swap; option and insurance contracts; credit default swaps.	
	Real Assets	Commodity		
		Real estate		

Types of Financial Intermediaries and Services ★

分类	**Brokers** ➢ Facilitate their clients to accomplish trades ➢ Help finding the counterparties with best price for clients ➢ Brokers & block brokers
	Dealers ➢ Fill their clients' orders by trading with them. The service that dealers provide is liquidity. Dealers profit when they can buy at prices that on average are lower than the prices at which they sell
	Broker vs. dealer ➢ Dealers hold inventories and profit from the price differences ➢ Brokers only facilitate the trade within their clients
	Insurance companies ➢ Moral hazard ➢ Adverse selection ➢ Fraud
概念	Exchange; securitizers; depository institutions; arbitrageurs clearinghouses and custodians

Positions Taken in an Asset

概念	Long position	Benefit form an increase in the price			
	Short position ★short position 流程	Benefit from a decrease in the price			
		Procedure: 1. Borrow securities from security lender and sell the borrowed securities. 2. Return the stocks upon your brokers request 3. Maintain the proceeds of short-sales as collateral.			
	Leveraged position ★leverage position 公式	Buy on margin	The interest rate paid on the funds is the call money rate.		
		Leverage ratio	The leverage ratio indicates how many times larger a position is than the equity that supports it.		
		Margin Requirement	Initial Margin	Min. amount at a new purchase	
			Maintenance Margin	Required equity position	
			Margin Call	$P_L^{`}=P_0\left(\dfrac{1\text{-}IM}{1\text{-}MM}\right)$	

Execution, Validity, and Clearing Instructions		
分类 ★	**Execution instructions:** specify how to trade	➢ Market orders VS Limit orders ➢ All-or-nothing orders ➢ Hidden orders ➢ Iceberg orders
	Validity instructions: specify when the order can be filled	➢ Day orders ➢ Good-till-cancelled orders (GTC) ➢ Immediate or cancel orders ➢ Good-on-close orders ➢ Good-on-open orders ➢ Stop orders
概念	**Clearing instructions**: specify how to settle the trade.	

Primary and Secondary Markets

分类	Primary market	Sold publicly	Underwritten offering Best efforts ★ Indications of interest Book building
		Sold privately	Private placement
		Other transaction methods	Shelf registration Dividend reinvestment plan Rights offering
	Secondary market	Function: providing liquidity & price discovery	
		Classification	Call markets vs. continuous markets Order-driven market vs. quote-driven market vs. brokered markets

Quote-driven, Order-driven, and Brokered Markets		
分类	**Order-driven market**	Order matching rules ➤ Price priority ➤ Secondary precedence rule
	Quote-driven market	Referred to as a dealer market
	Brokered markets	Unique or illiquid

Characteristics of a Well-functioning Financial System

概念	Complete markets	Fulfilling each entity's needs
	Operational efficiency	The orders will operated in a short time with low transaction cost
	Informational efficiency	The market prices of assets can quickly and accurate reflect the market information.
	Allocational efficiency	The market promotes the allocation of resources to their highest value uses.

Market Regulation		
概念	Fraud and theft	Regulators thus ensure that systems are ready to protect customers from fraud.
	Insider trading	Prevent insiders from exploiting other investors.
	Costly information	Require common financial reporting requirements.
	Defaults	Require that financial firms maintain minimum levels of capital.

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Security Market Indexes

Security Market Indices		
定义	Definitions 区别 price/return index	
	How to construct	选标的
		定权重
	Uses of indices	

Price Weighting and Equal Weighting		
分类	Price-weighted index	Price-weighted index= $\dfrac{\text{sum of stock prices}}{\text{number of stocks in index adjusted for splits}}$ ★公式 & 特点
	Equal-weighted index	An equal weight on the returns of all index stock: Geometric-averaged index value vs. arithmetic-averaged index value

Market Capitalization-Weighted Index and Fundamental Weighting		
分类	Market capitalization-weighted index	Current index value $= \dfrac{\text{current total market value}}{\text{base year total market value}} \times$ base year index value
	★特点	A float-adjusted market capitalization-weighted index
	Fundamental weighting	Value-tilted, contrarian-style

Rebalancing and Reconstitution of an Index		
概念	Rebalancing	Adjusting the weights of securities in a portfolio.
	Reconstitution	Adding and deleting securities that make up an index.

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Other Equity Index &Fixed-Income Index& Alternative Investments

分类	Broad market index	Represents an entire given equity market.
	Multi-market index	Comprise indices from different countries and are designed to represent multiple security markets.
	Sector index	Represent and track different economic sectors.
	Style index	Represent groups of securities classified according to market capitalization, value, growth, or a combination of these characteristics.
	Fixed-income Index ★特点	➤ Large universe of securities ➤ High turnover ➤ Dealer market& infrequent trading
	Alternative investments indexes	➤ Commodity indexes ➤ Real estate indexes ➤ Hedge fund Indexes

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Market Efficiency

Introduction of Market Efficiency

流程	New information→（影响）股价
	Price→(回归)Value→(回归速度)market efficiency
	影响有效性4因素； 3种EMH★ ★ (包括信息范围、那些信息不能用)
	→（试图推翻EMH★★）
	Market anomalies behavioral finance (不能推翻，EMH概念)

Contrast Weak Form, Semi-strong Form, Strong Form Market Efficiency

Form	Information	Analysis
Weak-Form	Market Information	Technical Analysis×
Semi-strong Form	Public Information	Technical Analysis× Fundamental Analysis×
Strong Form	Public Information Private Information	Technical Analysis× Fundamental Analysis× Inside information×

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Market Pricing Anomalies

概念	Time-series data	Calendar anomalies (January effect)	➢ Tax-loss selling ➢ Window dressing
		The overreaction effect	
		Momentum anomalies	
	Cross-sectional data	Size effect & Value effect	
	Other identified anomalies	➢ Closed-end investment funds ➢ Earnings announcements ➢ Initial public offerings ➢ Economic fundamentals	

Behavioral Finance Definition and Classification

定义	The psychological characteristics affect investments either by individuals or groups.
分类 ★特点	➢ Loss aversion ➢ Overconfidence ➢ Herding ➢ Information cascades ➢ Representativeness ➢ Mental accounting ➢ Conservatism ➢ Narrow framing

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Overview of Equity Securities

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Types and Characteristics of Equity Securities

分类	公开发行	➢ Common shares ➢ Callable common shares ➢ Putable common shares ➢ Preferences shares ➢ Cumulative preference shares ➢ Convertible preference shares
	私募发行	➢ Venture capital ➢ Leverage buyout ➢ PIPE
	海外发行	➢ Direct investing ➢ Global registered shares ➢ Depository receipts ★ ➢ BLDR
概念，区分每种股票类型风险大小		

Investment in Non-Domestic Equity Securities: DR		
分类&概念	**Direct investing** ★特点	
	Global registered shares	
	Depository receipts	Sponsored DR/ unsponsored DR Global depository receipts (GDRs) American depository receipts (ADRs)
	Basket of listed depository receipts	

Risk and Return Characteristics of Equity Securities	
概念	Putable stock < Common stock < Callable stock Cumulative preferred stock < Non-cumulative preferred stock Preferred stock < Common stock

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Introduction to Industry and Company Analysis

External Influences on Industry Growth, Profitability, and Risk	
概念	- Macroeconomics - Technology - Demographics - Governments - Social influence

Current Industry Classification Systems		
分类	Cyclical firm	- High earnings volatility - High operating leverage
	Non-cyclical firm	- Defensive industries - Growth industries
	Statistical methods	

Strategic Analysis of an Industry		
定义	**Michael Porter**	➢ Rivalry among existing competitors ➢ Threat of new entrants ➢ Threat of substitute products ➢ Bargaining power of buyers ➢ Bargaining power of suppliers

Pricing Power and Price Competition		
概念	**Barriers to entry**	Low barriers to entry → little pricing power High barriers to entry do not necessarily mean high pricing power.
	Industry concentration	Not necessarily guarantee pricing power.
	Industry capacity	Undercapacity → higher pricing power Overcapacity → lower pricing power
	Market share stability	Stable market shares indicate less intense competition.

Industry Life Cycle Models

特点	Embryonic	Growth is slow, high prices, substantial investment required, high risk of failure.
	Growth	Rapidly increasing demand, falling prices, limited competition, increasing profitability.
	Shakeout	Slowing growth, intense competition, increasing industry overcapacity, cost cutting, increased failures.
	Mature	Slow growth, consolidation, stable prices, high barriers to entry.
	Decline	Negative growth, declining prices, consolidation.

Company Analysis

概念	Cost leadership	With the same product, the firm seeks to a lower cost.
	Differentiation	With the same cost, the firm seeks to provide product benefits that other firms do no provide.
	Focus	The firm targets a niche market.

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Equity Valuation: Concepts and Basic Tools

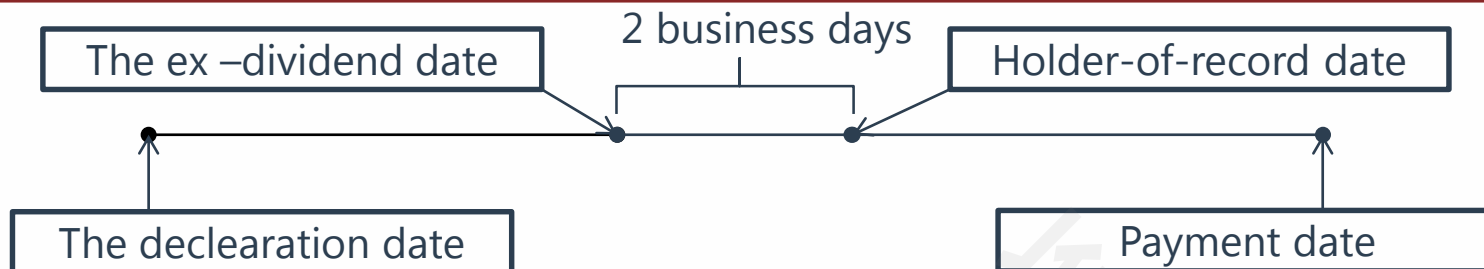| Dividends	
Cash dividend	➢ Reduce both the value of the company's assets and market value of equity ➢ No effect on shareholders wealth
Stock dividends & stock splits	➢ Both create more shares ➢ A proportionate drop in the price per share ➢ No effect on shareholder wealth
Reverse stock splits	➢ Increase the stock prices ➢ Reduce the number of shares outstanding ➢ No effect on the market value of the firm's equity

Share Repurchase	
Share repurchase methods	➤ Buy in the open market ➤ Buy a fixed number of shares at a fixed price. ➤ Repurchase by direct negotiation. ➤ A share repurchase may increase EPS with debt issuing, when earning yield>after tax cost of debt ➤ A share repurchase may increase BVPS, when market price(repurchase price) < original BVPS

Dividend Payment Chronology

The ex –dividend date	2 business days	Holder-of-record date

The declearation date | Payment date

常见分红及影响 ★ ★ →区分变大变小

Indicator	Cash div.	Stock div.	Stock spilt	Repurchase
No. of shares	No changes	Increase	Increase	Decrease
Stock price	Ed – div	Ex- div (pro-rata)	Pro-rata decrease	Increased if signal is positive
EPS	No changes	Decrease	Decrease	Uncertain 区分 ★
P/E	Decrease	No changes	No changes	Uncertain
Market value	Decrease by cash paid	No changes	No changes	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 changes	Increase

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Equity Valuation Models

计算	**DFC**	DDM	优先股	$V_P = \dfrac{D_P}{r_P}$
			普通股 计算、 假设、 优缺点	$GGM \to p_0 = \dfrac{D_0\left(1+g_c\right)}{r_e\text{-}g_c} = \dfrac{D_1}{r_e\text{-}g_c}$ $D_0 = (1\text{-RR}) \times EPS$ $g_c = RPE \times RR$ $r_e = RFR + \beta(R_{mkt}\text{-RFR})$ Multi-stage model★
		FCF Model 计算		
	Multiplier models 优缺点	Justified P/E → Leading/Trailing P/E ★计算		
		Enterprise value; EV/EBITDA ★计算，比较		
	Asset-based models 计算，有市场价格用市场价格，无则账面价值			

		DCF Models
计算	**Preferred stock**	$V_p = \dfrac{D_p}{(1+r_p)} + \dfrac{D_p}{(1+r_p)^2} + \ldots + \dfrac{D_p}{(1+r_p)^n} = \dfrac{D_p}{r_p}$
	Common stock	**General DDM** $V_j = \dfrac{D_1}{(1+r)} + \dfrac{D_2}{(1+r)^2} + \ldots + \dfrac{D_\infty}{(1+r)^\infty} = \displaystyle\sum_{t=1}^{n} \dfrac{D_t}{(1+r)^t}$
		One-period valuation model $V_j = \dfrac{D_1}{(1+r)} + \dfrac{P_{j1}}{(1+r)}$
		★★★多阶段的 DDM的计算 **Multiple-year holding period** $V_0 = \dfrac{D_1}{(1+r_e)} + \dfrac{D_2}{(1+r_e)^2} + \ldots + \dfrac{D_n}{(1+r_e)^n} + \dfrac{P_n}{(1+r_e)^n}$ $P_n = \dfrac{D_{n+1}}{r_e - g_c}$
		Constant growth model $V_0 = \dfrac{D_0(1+g_c)}{r_e - g_c} = \dfrac{D_1}{r_e - g_c}$

Price Multiples

概念&计算	Trailing P/E	$\dfrac{P_0}{E_0} = \dfrac{D_0/E_0}{r-g}(1+g) = \dfrac{(1-b)(1+g)}{r-g}$
	Leading P/E	$\dfrac{P_0}{E_1} = \dfrac{D_1/E_1}{r-g} = \dfrac{1-b}{r-g}$ ★★ P/E ratio的计算
	P/BV	$\dfrac{P_0}{BV_0} = \dfrac{ROE-g}{r-g}$
	P / S	$\dfrac{P_0}{S_0} = \dfrac{\dfrac{E_0}{S_0} \times (1-b)(1+g)}{r-g}$
	P / CF	(Market Price per Share)/(Cash Flow per Share) Where: cash flow can be CF, adjusted CFO, FCFE, or EBITDA.

Enterprise Value Multiples ★ EV公式

概念&计算	EV = market value of common stock + market value of preferred equity + market value of debt– cash and short-term investments

Asset-Based Valuation Models

定义	The market or fair value of assets - the market or fair value of liabilities; Valuing private companies.

Comparison among Valuation Models

	Advantages	Disadvantages
DCF model	➤ Based on the finance theory ➤ Agreed on among the analysts	➤ Estimated inputs ➤ Sensitive to inputs
Price multiples	➤ Especially beneficial for analysts who are assigned to a particular industry or sector ➤ Price multiples are popular with investors ➤ Price multiples are available. ➤ Allow for relative comparisons, both cross-sectional and in time series	➤ Price multiples are not comparable for firms ➤ Price multiples for cyclical companies may be highly influenced by current economic conditions ➤ Differences in reporting rules among different markets

Comparison among Valuation Models

	Advantages	Disadvantages
Enterprise value multiples	➢ Even where the P/E is problematic because of negative earnings, the EV/EBITDA multiple can generally be computed because EBITDA is usually positive ➢ They are based on theoretically valid valuation models ➢ Using EBITDA to estimate enterprise value is logically appropriate	➢ Difficulty accurately assessing enterprise value if they do not have access to market quotations for the company's debt ➢ Substituting the book value of debt for the market value of debt provides only a rough estimate of the debt's market value

Comparison among Valuation Models

	Advantages	Disadvantages
Asset-based models	➤ Asset-based valuation of tangible assets may provide a baseline for a minimal valuation ➤ The asset-based valuation approach is most applicable when the market value of the corporate assets is readily determinable and the intangible assets are a relatively small proportion of corporate assets ➤ They become more popular in evaluating public firms that have fair values reported	➤ Companies with assets that do not have easily determinable market (fair) values are very difficult to analyze ➤ Asset and liability fair values can be very different from the values carried on the balance sheet ➤ When a company has significant intangibles, the method is invalid ➤ Asset values may be more difficult to estimate in a hyper-inflationary environment