



2022 CFA Level 1

Equity Investment Lecture note

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Study Session 11



Market

LOS 33 Market organization & Structure

LOS 34 Market Indices

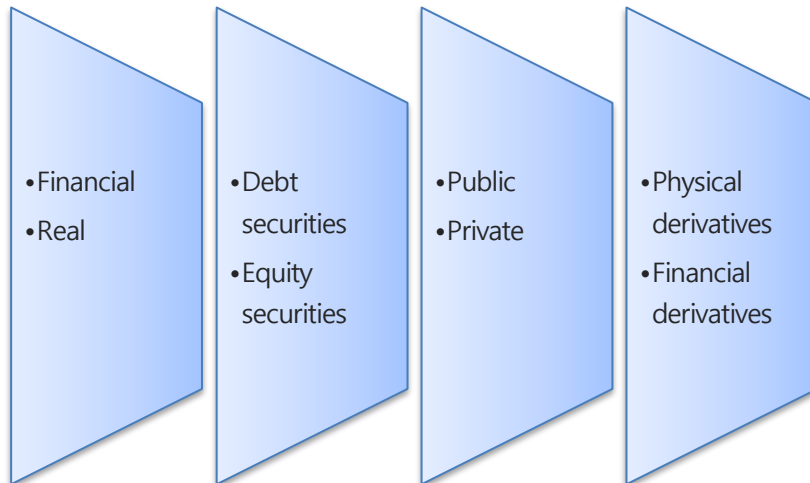
LOS 35 Market Efficiency

a. Functions of Financial System

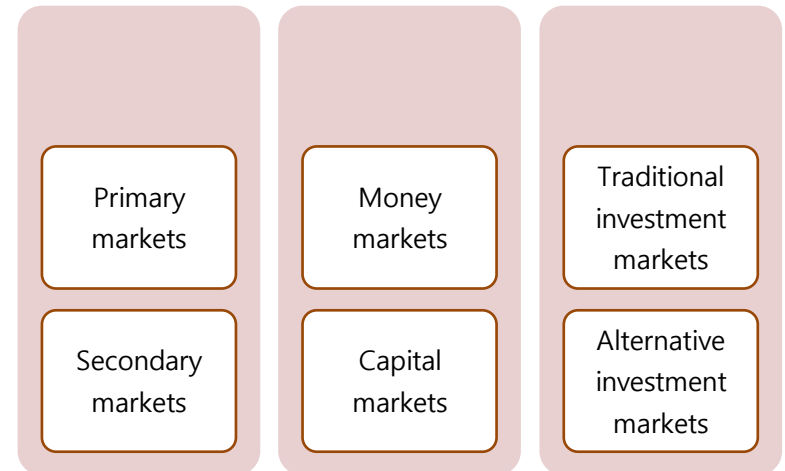
- Transfer Asset & Risk
- Determine Interest rate
- Allocate Capital

b. Classifications of Asset & Markets

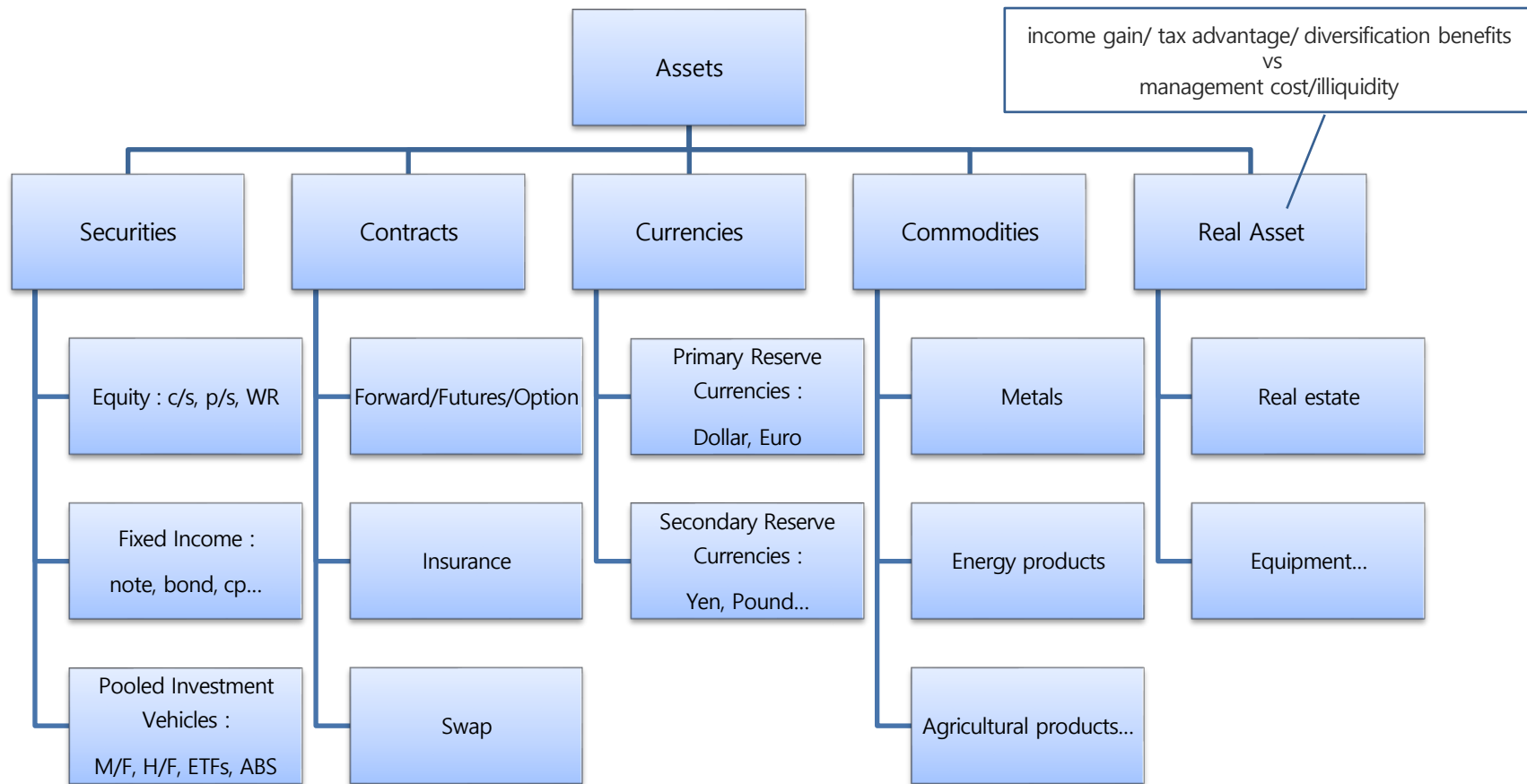
Asset



Market



c. Types of Asset



d. Intermediaries

- Broker : find counterparties – Broker/Block broker(large trade)/Investment bank
- Dealer : 거래 당사자 (buyer or seller)로서 기능. Market maker. Quote bid –ask price, Provide liquidity
- Exchange / Securitizer / Depository Institution / Insurance company / Arbitrageur / Clearinghouse&Custodian

e. Position

- Long position : 현물 매수, 선물/옵션 매수 → 자산 가격 ‘상승’ 시 이익
- Short position : Shortsale, 선물/옵션 매도 → 자산 가격 ‘하락’ 시 이익
- Hedger들은 보유 중인(long position) 자산의 위험을 헷지하기 위해 strongly correlated asset을 short position을 취함

❖ Shortsale : borrow stock → sell

- ✓ 1)Div는 lender에게 지급
- ✓ 2)담보(collateral) 예치

❖ Margin transaction : borrow money → buy stock – margin은 투자한 자본(equity position)을 의미

- ✓ Initial margin(개시증거금, 마진거래 개시 시점의 필요 자본)
- ✓ Maintenance margin(유지증거금, 거래 중에 유지해야 할 자본, 미달 시 margin call 발생)

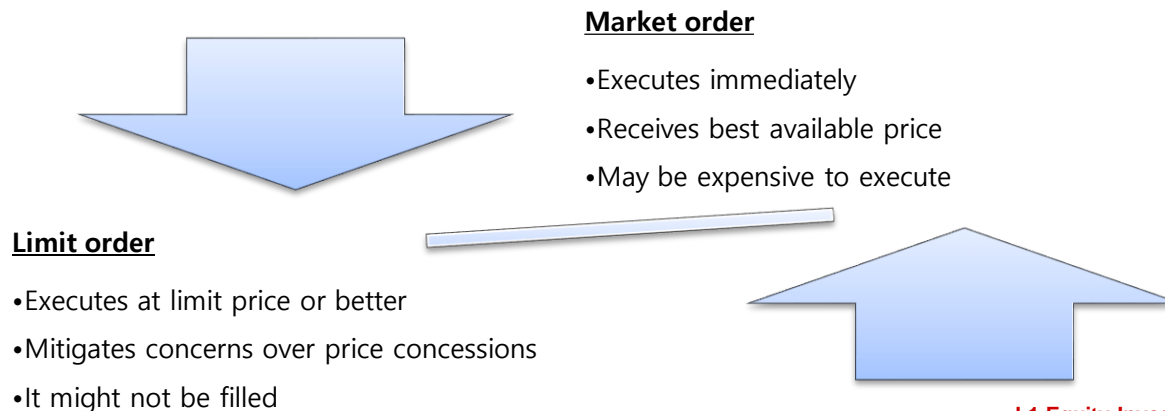
f. Leverage ratio / Return on margin transaction / **Margin Call Price**

- Leverage ratio = Asset/Equity
- Return on margin transaction : P0와 P1의 비교를 통해 수익률 산정 - Call money rate, Commission, Dividend 등 고려
- **Margin call price : 계산 문제 완벽하게 대비할 것**

g. Compare and Contrast Execution, Validity, and Clearing Instructions

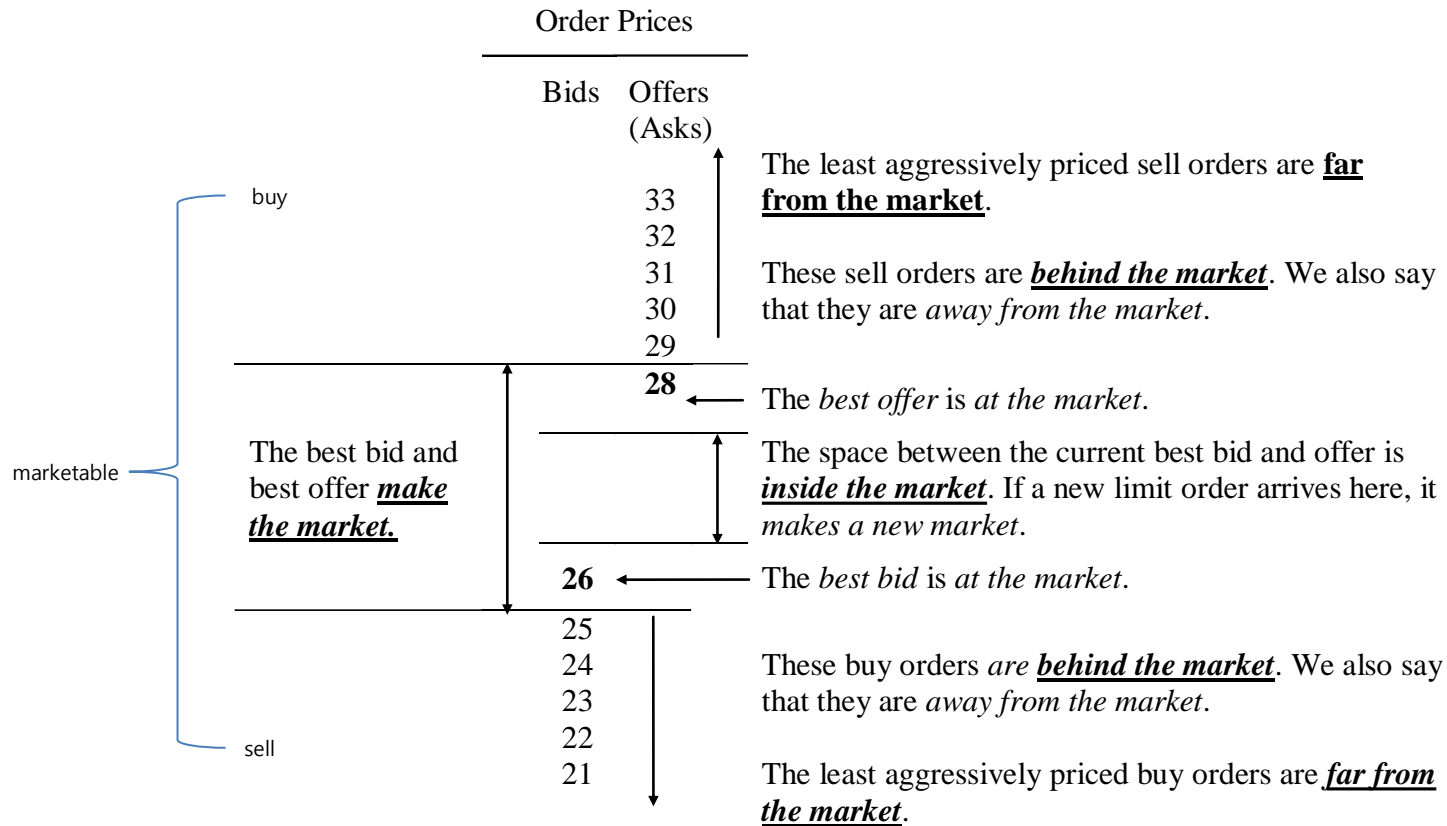
h. Market order vs Limit order

- Execution: how to fill the order
- Validity: when the order may be filled
- Clearing: how to manage trade settlement



g. Compare and Contrast Execution, Validity, and Clearing Instructions

Limit Order Book: "26 Bid, Offered at 28"



g. Compare and Contrast Execution, Validity, and Clearing Instructions

Validity Instructions

Day order

Good-till-cancelled order (GTC)

Immediate-or-cancel order (IOC)

Good-on-close order

Market-on-close order

Good-on-open order

Stop Orders (Stop-Loss Orders :

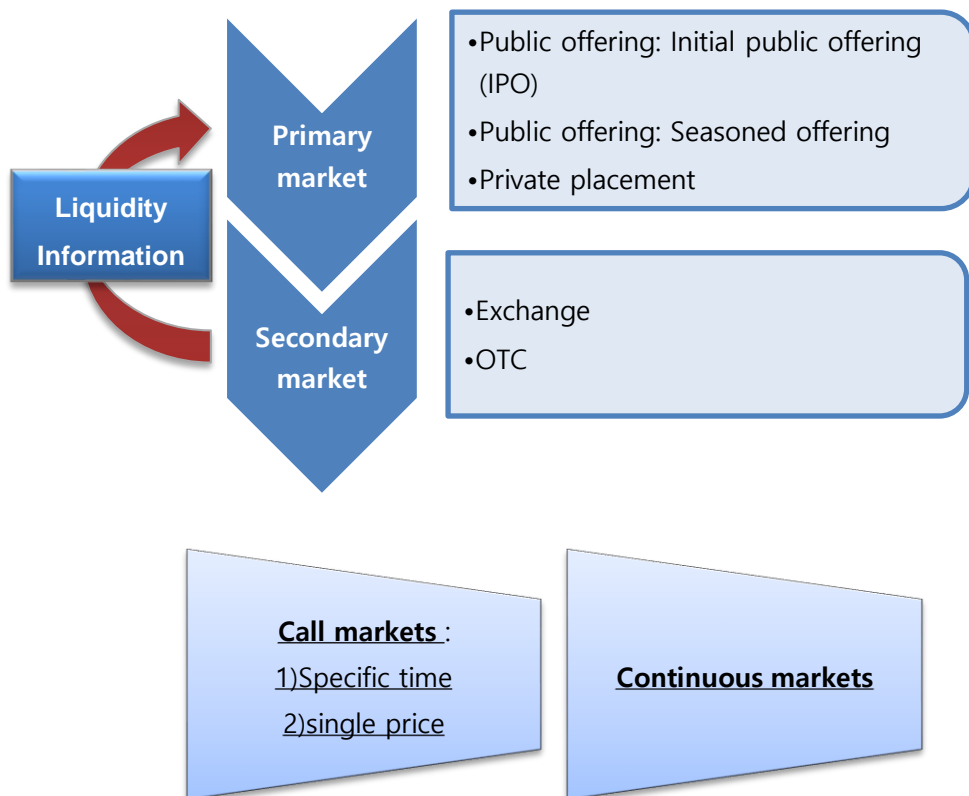
Protect profit & prevent loss

STOP ORDER:
Buy at \$40

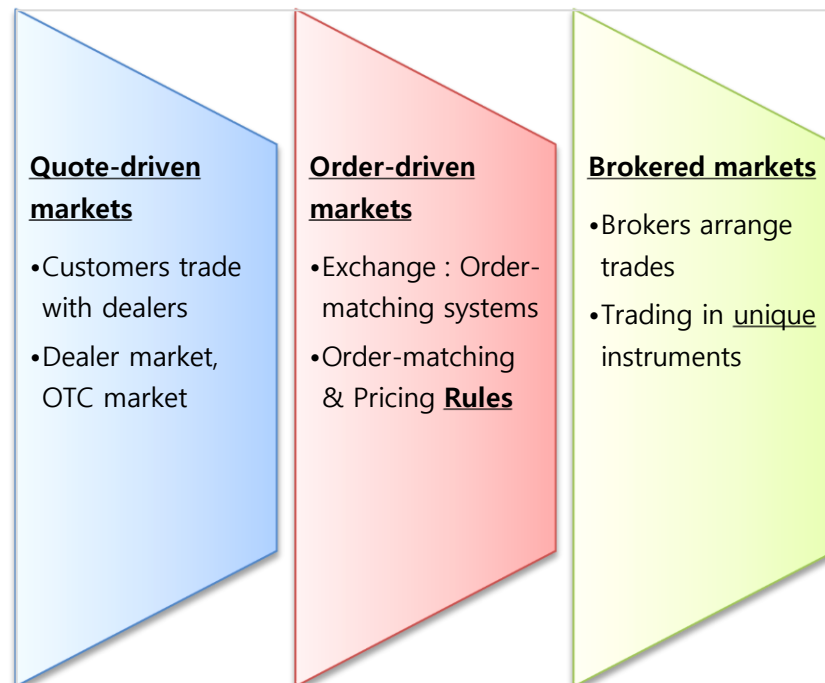
Current Price:
\$35

STOP ORDER:
Sell at \$30

- i. Primary & secondary market
- j. Order-driven/Quote-driven/Brokered markets



Execution Mechanisms



k. Characteristics of Well-Functioning Financial System

- Operational efficiency : Low trading cost
- Informational efficiency : Information → Price에 모두 반영
- Allocational efficiency : 투자자 효용 극대화 되도록 자원 배분

l. Objectives of Market Regulation

Control fraud

Control agency problems

Promote fairness

Set mutually beneficial standards

Prevent exploitation

Insure liabilities are funded

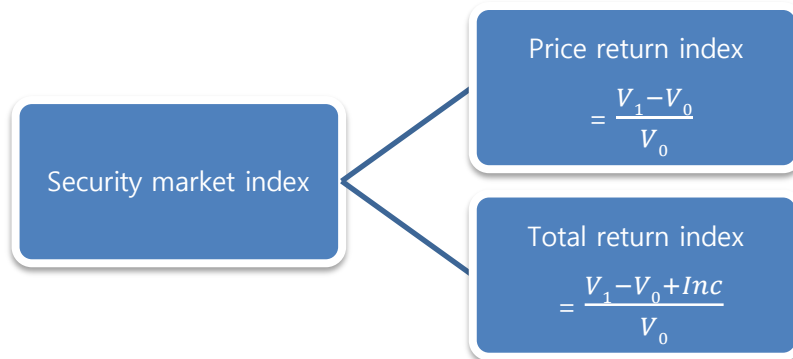
Summary

- Main functions of the financial system
- Classifications of assets and markets
- Financial intermediaries
- Long and short positions
- Leveraged positions
- Execution, validity, and clearing instructions
- Market and limit orders
- Primary and secondary markets
- Quote-driven, order-driven, and brokered markets
- Characteristics of a well-functioning market
- Objectives of market regulation

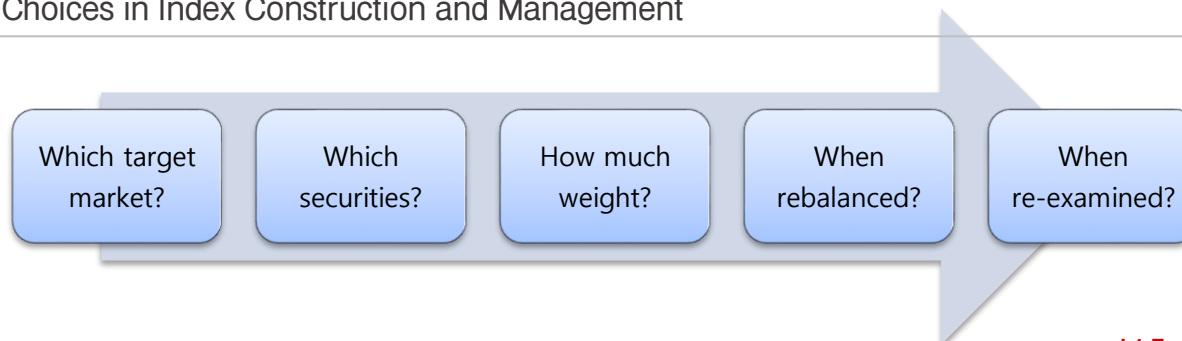
LOS 34 Market Indices

a. Security market index

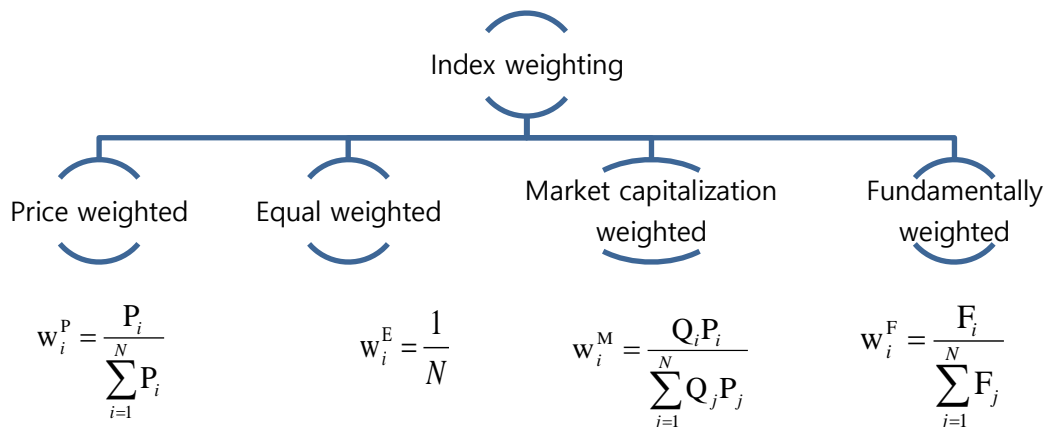
b. Price return vs Total return



c. Choices in Index Construction and Management



d. Weighting methods → e. Calculate Index



	\$	#	Mkt cap
A	100→ 110	10	1000→ 1100
B	50	30	1500
Total	150→ 160		2500→ 2600

Price weighted

- High price stocks have greater impact
- Simple
- Stock splits result in arbitrary changes

Market capitalization weighted

- High market cap stocks have greater impact
- Securities held in proportion to their value
- Similar to a momentum strategy

Equal weighted

- Frequent rebalancing
- Under- and over-representation
- Simple

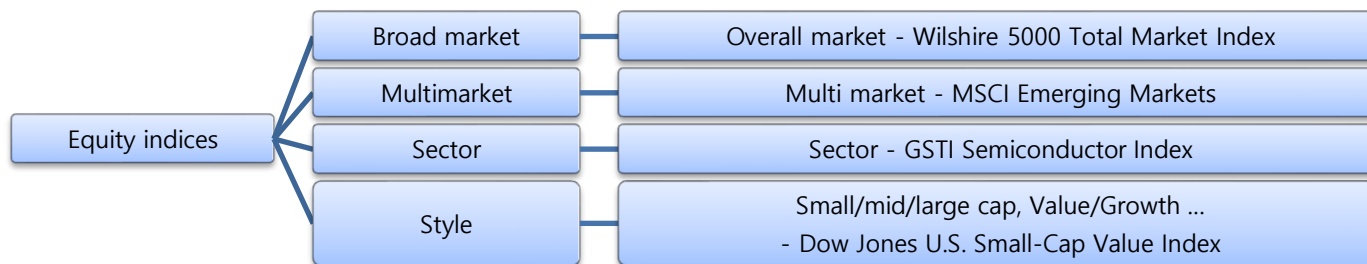
f. Rebalancing vs Reconstitution

- Rebalancing : changing the **weights**
- Reconstitution : changing the **constituent securities**

g. Uses of Indices

- Gauges of market sentiment
- Proxies for measuring and modeling returns, systematic risk, and risk-adjusted performance
- Proxies for asset classes in asset allocation models
- Benchmarks for actively managed portfolios
- Model portfolios for such investment products as index funds and exchange-traded funds (ETFs)

h. Types of equity indices



i. Types of Fixed income indices

- Broader Universe
- Dealer market & Infrequent trading - Illiquid
 - ➔ costly & difficult to make/replicate indices

j. Indices for Alternative Investments

Commodities

- Weighting methods
- Futures vs actual
- Commodity index return = Risk-free interest rate + Changes in futures prices + Roll yield

Real estate

- Appraisal indices
- Repeat sales indices
- Real estate investment trust (REIT) indices

Hedge funds

- Voluntary investment performance - Indices reflect different performances
- Survivorship bias
- Usually equal weighted index

k. Types of security market indices

a. Market efficiency

- (Informationally) Efficient capital market : 가격과 관련된 모든 Information → Price에 모두(fully, quickly, rationally) 반영
- Price는 이미 알려진 정보에는 반응 없음. New info 만이 가격에 영향

b. Market value vs Intrinsic value

- Market value = Price
- Intrinsic value = Real value(← estimation)
- Efficient market : $MV=IV \rightarrow$ Passive strategy
- Inefficient market : estimate IV (valuation) \rightarrow Active investment

c. Factors Affecting Market Efficiency

- Number of market participants
- Information availability
- Limit to trading – Arbitrage & Shortsale
- Transaction costs and information costs

d. Efficient Market Hypothesis

Forms of market efficiency	Market prices reflect :		
	Market information	Public information	Private information
Weak form	✓		
Semi-strong form	✓	✓	
Strong form	✓	✓	✓

e. Implications

- Abnormal return = $R_{\text{actual}} - E(R)$
- Technical analysis vs Fundamental analysis
- If market is weak form efficient, Technical Analysis is meaningless
- If market is Semi-strong form efficient, Technical Analysis & Fundamental Analysis are meaningless
- Portfolio Managers Role : Manage portfolio objectives → asset allocation

f. anomalies

Time series Anomalies

- Calendar anomalies
 - January Effect : Tax-loss selling, Window dressing
 - Weekend effect, Holiday effect...
- Overreaction and Momentum

Cross sectional Anomalies

- Size effect: small-cap outperform large-cap
- Value effect: value stocks outperform growth stocks

Other Anomalies

- Closed-End Investment Funds :closed-end fund selling at discounts from NAV
- Earnings Surprise
- Initial Public Offerings (IPOs) : Typically underpriced

- Anomaly가 존재함에도 시장은 효율적인가?
→ consistent한 abnormal return을 얻을 수 없다면 시장은 여전히 효율적

g. Behavioral Finance

Loss Aversion

- investors disliking losses more than they like comparable gains

Overconfidence

- investors overestimate their abilities to analyze security information

Herding

- clustered trading that may or may not be based on information
- cf : Information Cascades : uninformed traders imitate informed traders

- Behavioral Finance 의 존재에도 불구하고 시장은 효율적인가?
 - 인간의 합리성이 효율적 시장의 전제라면 시장은 비효율적
 - But, consistent한 abnormal return을 얻을 수 없다면 시장은 여전히 효율적



Study Session 12

Valuation

LOS 36 Equity overview

LOS 37 Industry & company Analysis

LOS 38 Valuation



a. Types of equity

Common Stock

- Ownership interests → voting right
- Statutory voting vs Cumulative voting
- Residual claim

Preference Stock

- Dividends are fixed and typically higher than common dividends
- Rank above common stock for dividend payments and liquidation claims
- Shareholders do not share in the firm's operating performance
- Generally do not have voting rights

Cumulative vs Noncumulative

- Cumulative : the unpaid dividends accrue and must be paid

Participating vs Nonparticipating

- Participating : additional dividend if the company's profits exceed a pre-specified level & additional distribution of the company's assets upon liquidation

❖ Possible Advantages of Convertible Preference Shares

- ✓ Earn a higher dividend
- ✓ Opportunity to share in profits(dividend)
- ✓ Benefit from a rise in the price of the common shares
- ✓ Price is less volatile than the common share price

b. Equity class

- 종류주식
- 차등의결권 : Class별로 의결권 차등 부여

c. Private vs Public

❖ Private의 특징

- ✓ Less liquidity, Negotiated price
- ✓ Limited disclosure, Lower reporting cost, Weaker Corporate governance
- ✓ Focus on Long Term prospect, Potentially greater return

Private – 3 Types

- Venture capital : early stage, illiquid
- Leveraged buyouts(LBO) – Leverage 활용
- Private investment in public equity(PIPE) – 상장기업에 집중투자하는 사모펀드

d. Investing in Nondomestic Equity

- Direct investment
- Depository receipts (DR) – 주권은 예탁은행(Depository Bank)에 맡기고 주주권을 표창하는 증서(DR)를 발행하여 상장
 - ✓ Global depository receipts (GDR-nonUS) vs American depository receipts (ADR-US)
 - ✓ Sponsored DR(발행기업이 요청/비용부담, Voting right은 Investor에게) vs Unsponsored DR(투자자가 요청/비용부담, Voting right은 예탁기관에게)
- Global registered share (GRS) – 여러나라에 여러나라 통화로 상장
- Basket of listed depository receipts (BLDR) – 여러 개의 DR을 모아서 만든 ETFs

e. Risk & Return Characteristics of Equity

- Return : Dividend income + Price change (capital gain) + Foreign exchange gains or losses
- **Risk** : Uncertainty of future cash flow = SD of return
 - ✓ P.S < C.S : Fixed dividend, Priority claim on income
 - ✓ Putable < non-Callable < Callable
 - ✓ Cumulative < non-Cumulative

f. Role of Equity – Why Issue Equity?

- Raise capital → Investment → increase net income($BV \uparrow$) → maximize shareholder's wealth($MV \uparrow$)
- Provide liquidity(상장주식 보유는 유동성/자본적정성 비율 규제 맞출 때 중요)

g. Market value vs Book value

- Book Value : $\text{Asset-Lia} = \text{Raised capital} + (\text{NI} \rightarrow \text{R/E})$ - historical input
- Market Value : 주가에 미래 '기대(expectation)' 반영 - output

h. ROE, Cost of Equity, Required Rate of Return

- Cost of equity :
 - ✓ 계약상 지불의무 $X \rightarrow$ CAPM/DDM 등 활용하여 추정
 - ✓ 주주의 부 극대화를 위해 자본비용은 최소화 노력 \rightarrow minimum required rates of return의 proxy로 사용
- Required rates of return : 투자자마다 다른 추정 \rightarrow 다양한 required return
- $\text{ROE} = \text{NI}/\text{BV}$
 - ✓ Higher ROE가 반드시 좋은 지는 검증 필요(ex>부채조달을 통한 자사주 매입은 ROE 증가시키나 Risk 역시 증가)

a. Uses of Industry Analysis

- Understanding a company's business and business environment
- Identifying active equity investment opportunities – Industry Rotation
- Portfolio performance attribution

b. Industry Classification – grouping method

- Products and/or Services
- Business-Cycle Sensitivities : cyclical vs noncyclical
- Statistical Similarities

c. Cyclical and Noncyclical Companies. Limitations of Industry and Company Descriptors

- Cyclical Company : Profits strongly correlated with economic activity, High operating leverage, Expensive&nonessential products



c. Cyclical and Noncyclical Companies. Limitations of Industry and Company Descriptors

- Limitations of Industry and Company Descriptors
 - ✓ Cyclical industry로 분류한 회사 중에도 경기민감도 낮은 회사 존재
 - ✓ Defensive industry로 분류된 회사 중에 Growth firm 포함될 수 있음
 - ✓ 2008년과 같은 Deep recession에는 섹터 구분 무관하게 모두 영향 받음

d. Industry Classification System

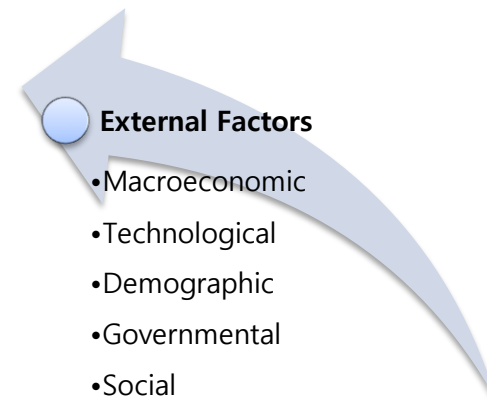
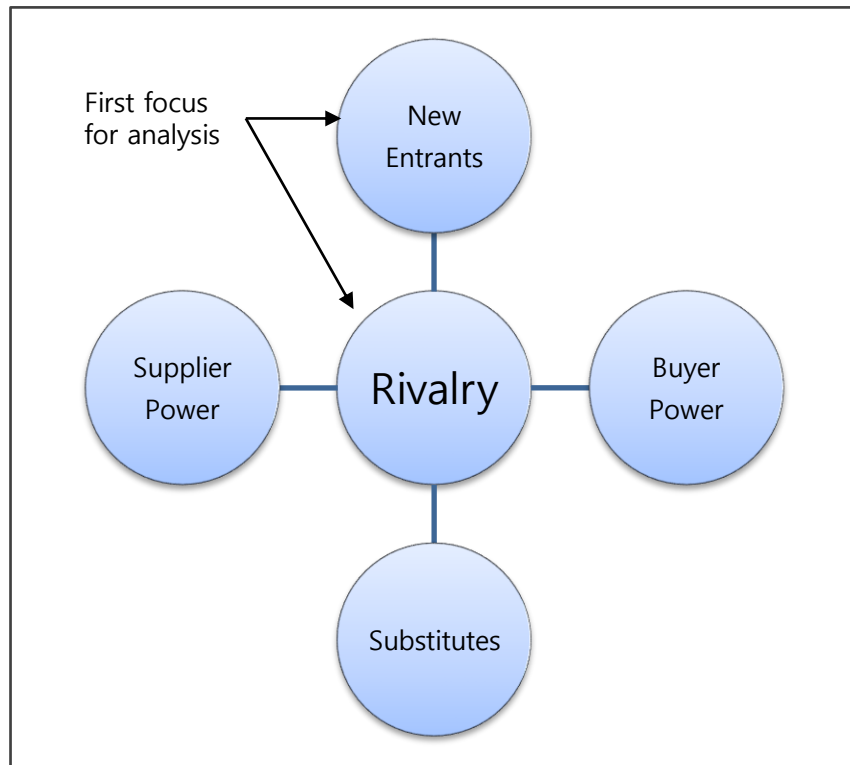
- Commercial Classification : 개별회사 명시, 업데이트 주기 짧음, Size별 구분, For profit, Public Firm을 대상으로 함
- Governmental Classification : 개별회사 명시 않음. Large-small, public-private, profit-not profit 구별 않음

e. Peer group

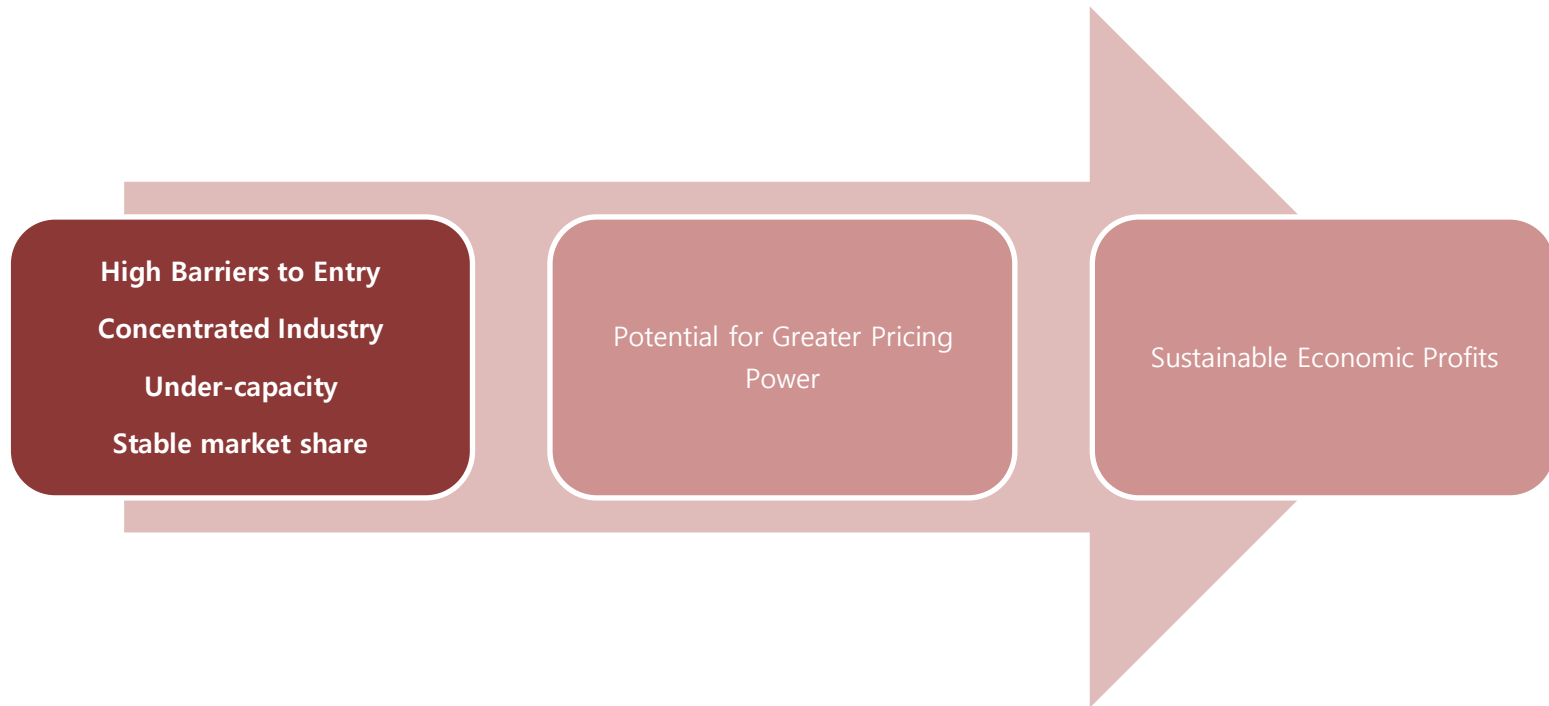
f. Elements in industry analysis

g. Strategic Analysis – 5 Forces

- 산업분석은 산업의 매력도(attractiveness)를 평가하는 것. 경제적 이익(Economic profit)이 있는 산업이 매력적인 산업
- $\text{Economic profit} = \text{ROIC} - \text{cost of capital}$ ← 경제적 이익은 Pricing power에 의해 결정

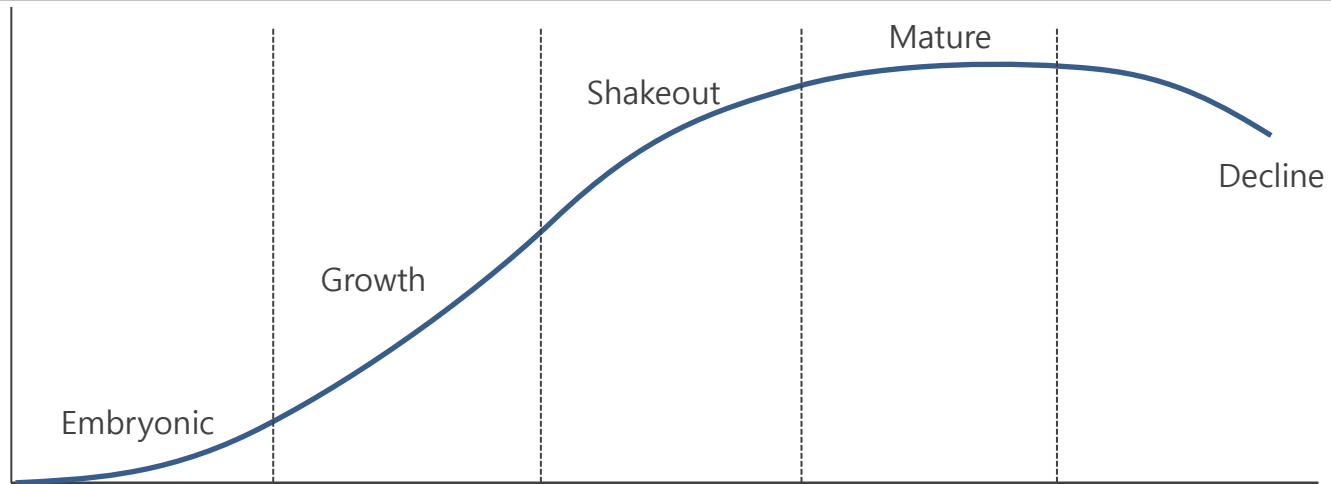


h. Effects of industry concentration, ease of entry, capacity and Market Share Stability



LOS 37 Industry & company Analysis

i. Industry Life Cycle



	Embryonic	Growth	Shakeout	Mature	Decline
Growth	slow	rapid	slowing	little	Negative
Price	High	falling	cut	stable	Decline
Competition	X	low	intense	consolidation	High (demand ↓ + Excess capa → price war)
others	Large investment	Increasing profitability	declining profitability	Oligopoly	
	High failure		Overcapacity	High entry barrier	
			Restructuring → High failure	Superior firm MS ↑	

LOS 37 Industry & company Analysis

j. External factors

Macroeconomic Influences	•GDP Growth, Interest Rates, Inflation
Technological Influences	•Digital camera
Demographic Influences	•Baby Boomer generation, Aging populations
Governmental Influences	•Tax policies, Regulation
Social Influences	•Women in the workforce

k. Industry Comparision

l. Company Analysis

company profile : basic understanding of its businesses, corporate governance, strengths & weaknesses

Financial Ratio

Product & Service

Competitive Strategy : low-cost strategy (cost leadership) or differentiation strategy



a. Estimated Value and Market Price



b. Major Categories of Equity Valuation Models

Present value models

- Dividend discount model
- Free cash flow to equity model

Multiplier models

- Share price multiples
- Enterprise value multiples

Asset-based valuation models

- Assets minus liabilities & preferred shares

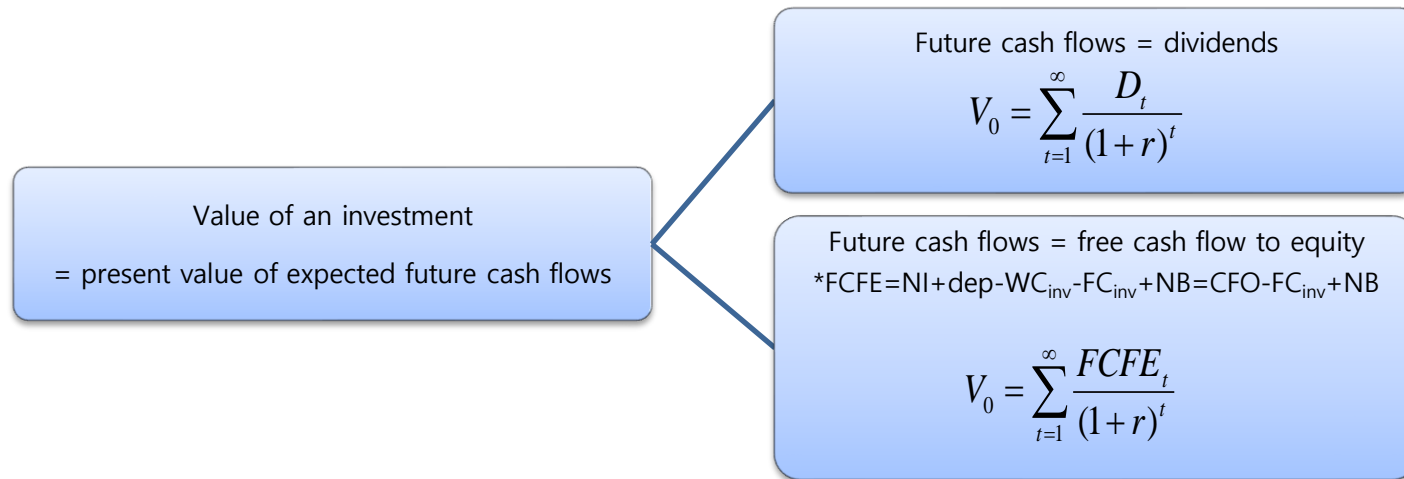
c. Cash dividends, Stock dividends, Stock splits, Revers Stock splits, Share repurchase

Cash dividends	•Regular dividends, special dividends(=extra dividends)
Stock dividends	•Dividends paid out in new shares → each share will be worth less
Stock splits	•Divide each share into multiple stock → each share price will be drop
Revers Stock splits	•Opposite of stock splits → fewer stock outstanding → higher stock price
Share repurchase	•Buys outstanding shares of its own stock → same effect as cash dividends

d. Dividend payment chronology



e. Present Value Models



f. Preferred Stock Valuation

$$V_0 = \frac{D_p}{r_p}$$

g. Gordon Growth Model

- GGM은 single stage
- No current dividend : 단기적으로 배당 없고, 수 년 후에야 배당 개시되는 경우에는 배당 개시 1년 前 시점 기준으로 계산 후 현가
- Multi-stage dividend growth model : 2-stage 에 대한 계산 문제 대비

$$*GGM : V_0 = \frac{D_1}{r - g}$$

- $D_1 = E_0 \times \text{payout} \times (1+g)$
- $g(\text{sustainable growth rate}) = RR \times ROE$
- $r(\text{required rate of return}) = R_f + \beta [E(R_m) - R_f]$

<EX> Value?

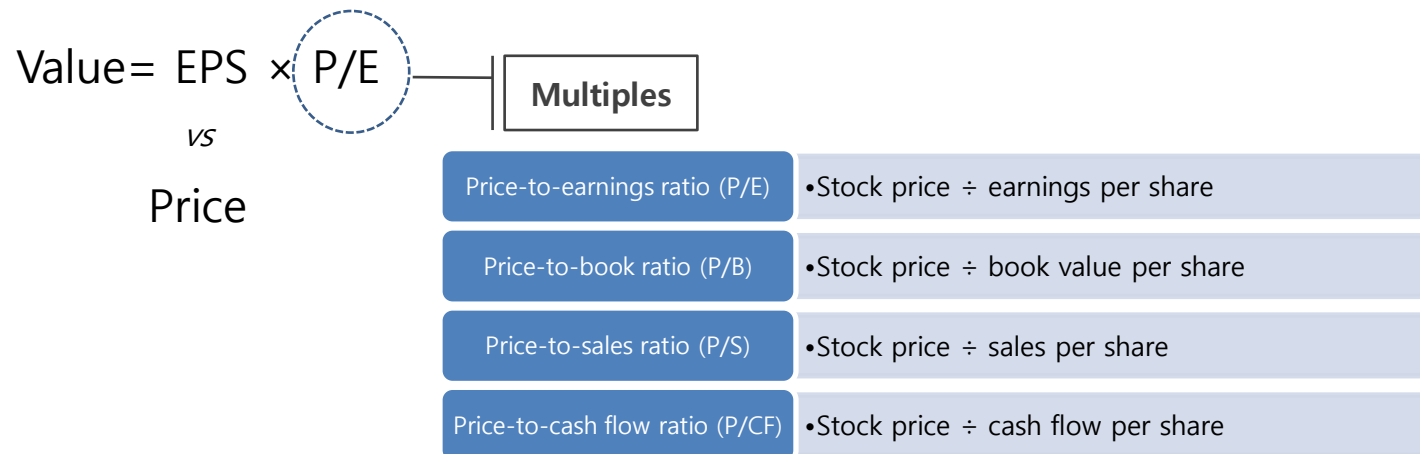
- The current (most recent) annual dividend (D_0) = \$2.0
- Dividends are expected to grow at 5 percent per year
- The required rate of return on equity is 10 percent

$$V_0 = \frac{\$2(1+0.05)}{0.10-0.05} = \$42$$

h. Appropriate Models

- Gordon growth model : dividend-paying / non-cyclical / mature growth phase
- Multistage growth models : rapidly, slowly, erratically growing dividend followed by constant growth
- 3-stage : (1) growth, (2) transition, and (3) maturity - young firm

i / j. Multiples



LOS 38 Valuation

i / j. Multiples

multiples based on **fundamentals**

양변을 E_1 으로 나누면

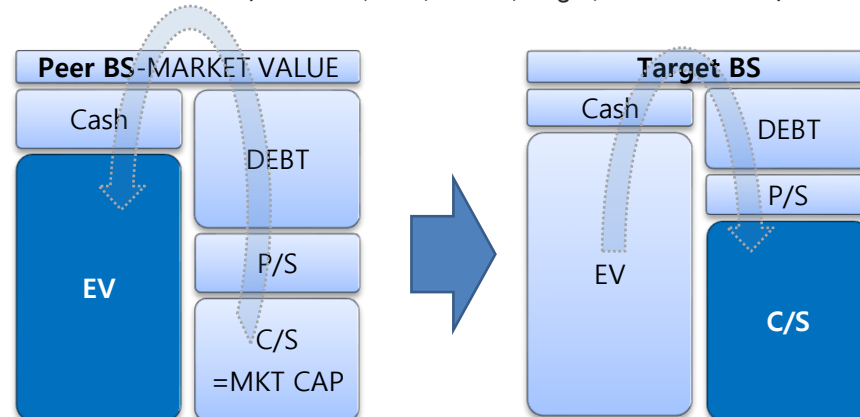
$$\bullet \text{ Justified P/E : } V_0 = P_0 = \frac{D_1}{r-g} \rightarrow \frac{P_0}{E_1} = \frac{D_1/E_1}{r-g} = \frac{\text{payout}}{r-g}$$

multiples based on **comparables**

- Economic rationale : The law of one price
- Time series analysis & Cross-sectional analysis 가능
- Size, Industry, Growth 다른 기업 간 비교 어려움
- Volatile 하다면 P/E 보다 P/S, P/CF
- Disadvantage : 1)Comp vs Funda, 2)Acctg 차이, 3)Cyclical firm → 활용 제한

k. Enterprise Value Multiples

- Enterprise value = market value of Equity(c/s+p/s) + market value of debt - cash and investments → takeover value
- $EV \div EBITDA = EV/EBITDA \text{ (Peer)} \rightarrow EV(\text{Target}) = EBITDA \times EV/EBITDA \rightarrow \text{Equity Value}(\text{Target}) = EV + \text{CASH} - \text{DEBT} - \text{P/S}$



I. Asset-Based Valuation



- Asset-Based Valuations are reliable when the firm has primarily tangible assets, assets with ready market value(financial or natural resource firms) or when the firm is being liquidated
- Potential Problems of Asset-Based Valuations
 - ✓ Difficulties determining market (fair) values
 - ✓ Book values differ significantly from market values
 - ✓ Intangible assets
 - ✓ Hyper- or rapidly rising inflation

m. Advantages and Disadvantages of equity valuation models

Present value models	<ul style="list-style-type: none"> • 이론적으로 우수 • Input 은 추정치(불확실성 높음). 가치평가 시 input에 매우 민감
Multiplier models	<ul style="list-style-type: none"> • Ratios are easy to compute and analysis is easily understood. 시계열 및 횡단면 분석 가능 • "Fundamental vs comparable" 방식 간에 다른 결론이 도출될 가능성 존재 • Accounting method 다른 회사간 비교 어려움(특히, 다른 국가 회사들 간의 비교 시) • Cyclical한 회사의 Price multiple은 경제 상황 따라 에 큰 영향을 받음 • Industry / size / growth 상이한 회사간 Price multiple 활용한 비교 어려움 • 분모가 음(-)의 값을 가질 경우 사용 불가능