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ECO 2200: Module 7

Dorina Tila

CUNY Kingsborough Community College

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Risks & Equity Options



Module 7: Outline

- Two types of investment risk
- Risks v. Returns
- Betas
- Equity
 - Common Stock
 - Intrinsic Value & Price
 - Discounted Dividend Model
 - Corporate Valuation Model
 - Preferred Stock

Investment Risks

- Two types of investment risk
 - Stand-alone risk
 - Market Risk + Diversification
 - Portfolio risk

Market risk

- measured by beta
- portion of a security's stand-alone risk that cannot be eliminated through diversification.

Diversifiable risk

- portion of a security's stand-alone risk that can be eliminated through proper diversification.

Investment Risks

- Two types of investment risk
 - Stand-alone risk
 - Portfolio risk

Stand-alone risk = Market risk + Diversifiable risk

Market risk

- measured by beta
- portion of a security's stand-alone risk that cannot be eliminated through diversification.

Diversifiable risk

- portion of a security's stand-alone risk that can be eliminated through proper diversification.

Capital Asset Pricing Model (CAPM)

- Model linking risk and required returns.
- $r_i = r_{RF} + (r_M - r_{RF})b_i$
- The riskiness of a stock is its contribution to the riskiness of a well-diversified portfolio.

Market Risk & Beta

- Measures a stock's market risk
- Shows a stock's volatility relative to the market
- Indicates how risky a stock is if the stock is held in a well-diversified portfolio
 - If $\beta = 1.0$, the security is just as risky as the average stock.
 - If $\beta > 1.0$, the security is riskier than average.
 - If $\beta < 1.0$, the security is less risky than average.
 - Most stocks have betas in the range of 0.5 to 1.5.

Portfolio Risk

- Portfolio risk is a chance that the combination of assets or units, within the investments that you own, fail to meet financial objectives.

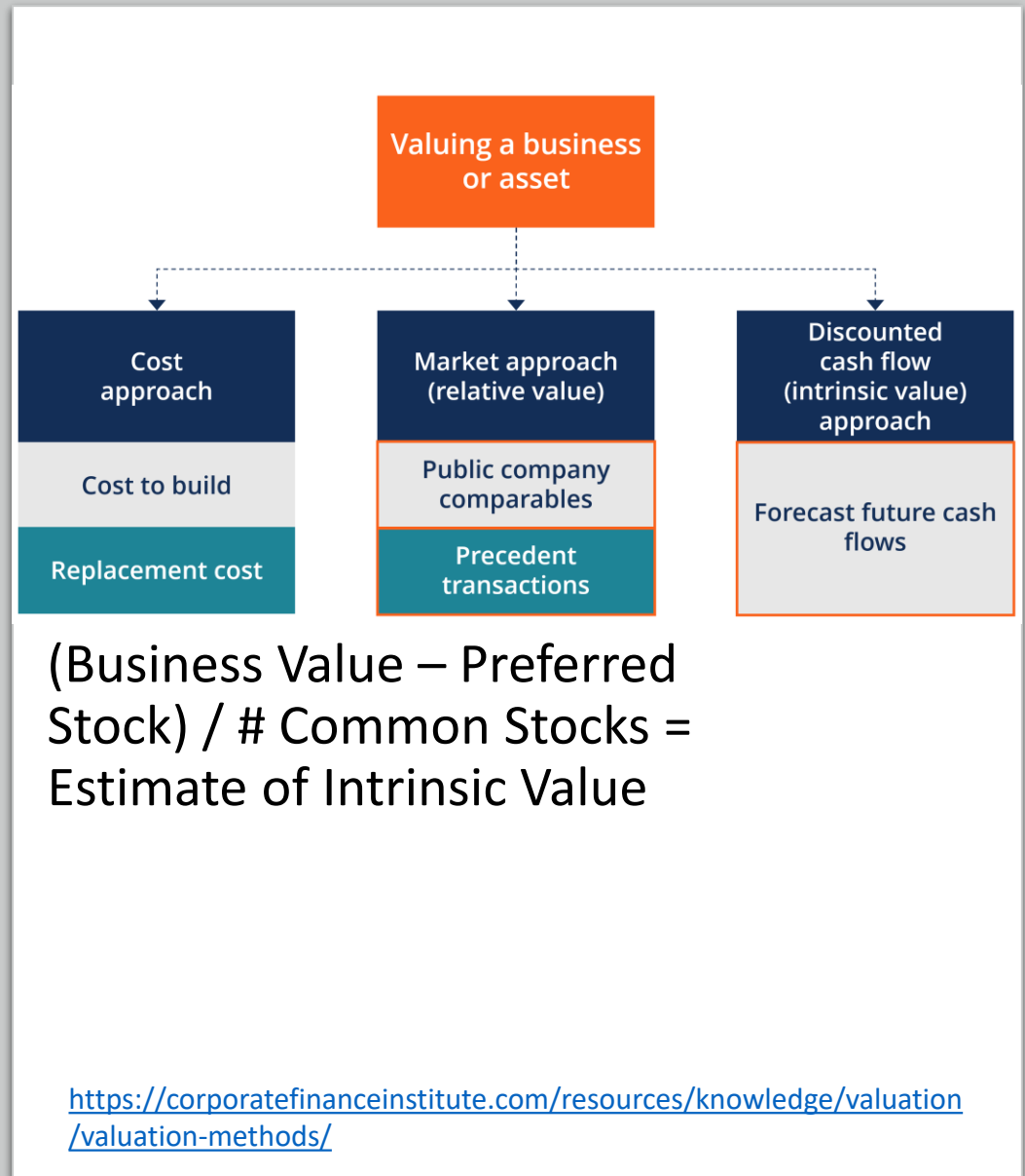
Stocks

- **Ownership**

- **Control**
 - **Stockholders elect directors**
 - **Directors elect management**
 - **Management makes business daily decisions**

Common Stock - How to estimate intrinsic value?

Stocks with a price below (above) its intrinsic value are undervalued



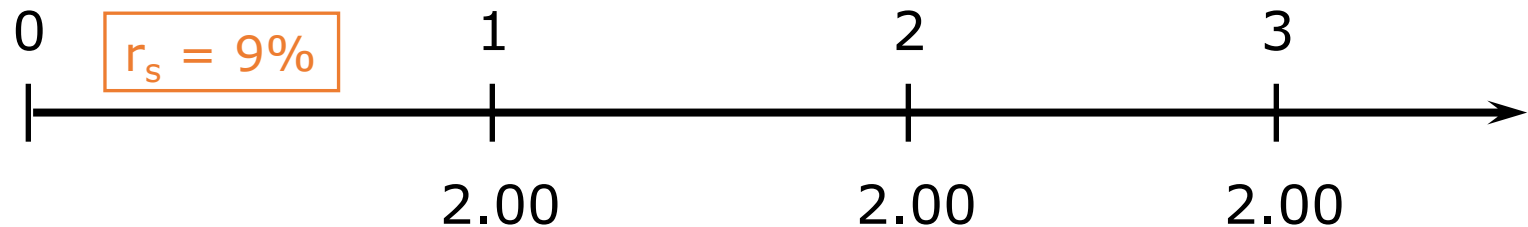
Common Stock's Intrinsic Value Discount Dividend Model

- Value of a stock is the present value (PV) of the future dividends expected to be generated by the stock.

$$\hat{P}_0 = \frac{D_1}{(1 + r_s)^1} + \frac{D_2}{(1 + r_s)^2} + \frac{D_3}{(1 + r_s)^3} + \dots + \frac{D_\infty}{(1 + r_s)^\infty}$$

Common Stock's Intrinsic Value Discount Dividend Model

- A dividend stream of \$2.00 perpetually
- This example assumes no growth



$$\hat{P}_0 = \frac{\text{PMT}}{r} = \frac{\$2.00}{0.09} = \$22.22$$

Common Stock's Intrinsic Value Discount Dividend Model

- Dividend yield (first year)

$$= \$2.00/\$37.19 = 5.38\%$$

- Capital gains yield (first year)

$$= 9.00\% - 5.38\% = 3.62\%$$

- After $t = 3$, the stock has constant growth and dividend yield = 5%, while capital gains yield = 4%.

Preferred Stocks

- Like bonds, preferred stockholders receive a fixed dividend that must be paid before dividends are paid to common stockholders.
 - However, companies can omit preferred dividend payments without fear of pushing the firm into bankruptcy.

Preferred Stock

- If preferred stock
- An annual dividend of \$5
- Sells for \$100
- What is the preferred stock's expected return?

$$V_p = \frac{D}{r_p}$$

$$\$100 = \frac{\$5}{r_p}$$

$$\begin{aligned}\hat{r}_p &= \frac{\$5}{\$100} \\ &= 0.05 = 5\%\end{aligned}$$