



IBS

INTERNATIONAL
BUSINESS SCHOOL

Valuing Shares

Principles and Practices of Business Finance

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Agenda

1. What is a Share
2. Valuing Common Stocks: Intrinsic Value
3. Valuing Common Stocks: Dividend Discount Model
4. Valuing Common Stocks: Constant Growth Model
5. Share's Expected Return

What is a Share/Stock

Shares = ownership security, there are two types of shares

1. **Common shares (ordinary)**: the holder has some rights:

- The right of participate and vote at general assembly meeting
- The right of dividends receiving.
- The right of (rights offer) in case of a new share issuing
- The right of getting information
- have a claim on assets in case of liquidation (low priority)

2. **Preferred shares: (hybrid financial resource)**

- Without voting rights
- Fixed dividends
- Get paid in advance of common shares in case of bankruptcy

Valuing Common Stocks

- Stock Valuation Methods
 1. Valuation by comparables (*not discussed in details during this course*)
 2. Intrinsic Value - Present value of future cash payoffs from a stock or other security (**Based on the same logic as bond valuation**)
 3. Dividend Discount Model

Valuing Common Stocks

Intrinsic Value

Intrinsic Value is

$$V_0 = \frac{\text{Div}_1 + P_1}{1 + r}$$

V_0 = The intrinsic value of the share

Div_1 = The expected dividend per share at the end of the year

P_1 = The predicted stock price in year 1

r = The discount rate for the stock's expected cash flows

Valuing Common Stocks

Intrinsic Value

Example - What is the intrinsic value of a share if expected dividends are \$3/share and the expected price in 1 year is \$81/share? Assume a discount rate of 12%.

$$V_0 = \frac{\text{Div}_1 + P_1}{1 + r} = \frac{3 + 81}{1.12} = \$75$$

Valuing Common Stocks

Dividend Discount Model

- Dividend Discount Model - Discounted cash-flow model which states that today's stock price equals the present value of all expected future dividends

$$P_0 = \frac{\text{Div}_1}{(1+r)^1} + \frac{\text{Div}_2}{(1+r)^2} + \dots + \frac{\text{Div}_t + P_t}{(1+r)^t}$$

t - Time horizon for your investment

Valuing Common Stocks

Dividend Discount Model

Example

Current forecasts are for XYZ Company to pay dividends of \$3, \$3.24, and \$3.50 over the next three years, respectively. At the end of three years you anticipate selling your stock at a market price of \$94.48. What is the price of the stock given a 12% expected return?

$$PV = \frac{3.00}{(1+.12)^1} + \frac{3.24}{(1+.12)^2} + \frac{3.50+94.48}{(1+.12)^3}$$

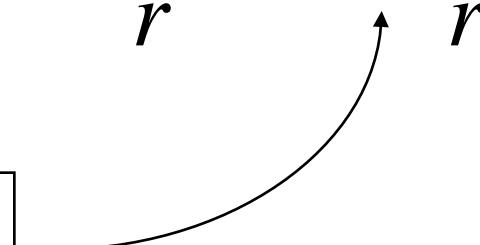
$$PV = \$75.00$$

Valuing Common Stocks

If we forecast no growth, and plan to hold out stock indefinitely, we will then value the stock as a **PERPETUITY**

$$Perpetuity = P_0 = \frac{Div_1}{r} \text{ or } \frac{EPS_1}{r}$$

Assumes all earnings are paid to shareholders



Valuing Common Stocks

Constant Growth Model

- If a firm elects to pay a lower dividend, and reinvest the funds, the stock price may increase because future dividends may be higher
 - Payout Ratio - Fraction of earnings paid out as dividends
 - Plowback Ratio - Fraction of earnings retained by the firm
 - Sustainable Growth Rate - The firm's growth rate if it plows back a constant fraction of earnings, maintains a constant return on equity, and keeps its debt ratio constant

Valuing Common Stocks

Constant Growth Model

- Constant Growth Model - A version of the dividend growth model in which dividends grow at a constant rate (*Gordon Growth Model*)

$$P_0 = \frac{Div_1}{r - g}$$

Given any combination of variables in the equation, you can solve for the unknown variable

Valuing Common Stocks

Constant Growth Model

Example

What is the value of a stock that expects to pay a \$3.00 dividend next year, and then increase the dividend at a rate of 8% per year, indefinitely? Assume a 12% expected return.

$$P_0 = \frac{\text{Div}_1}{r - g} = \frac{\$3.00}{.12 - .08} = \$75.00$$

Valuing Common Stocks

Constant Growth Model

Example- continued

If the same stock is selling for \$100 in the stock market, what might the market be assuming about the growth in dividends?

$$\$100 = \frac{\$3.00}{.12 - g}$$

$$g = .09$$

Answer:

The market is assuming the dividend will grow at 9% per year, indefinitely.

Valuing Common Stocks

Constant Growth Model

- Growth can be derived from applying the return on equity to the percentage of earnings plowed back into operations

$$\begin{aligned}g &= \text{sustainable growth rate} \\&= ROE \times \text{plowback ratio}\end{aligned}$$

Valuing Common Stocks

Constant Growth Model

Example

Our company forecasts to pay a \$5.00 dividend next year, which represents 100% of its earnings. This will provide investors with a 12% expected return. Instead, we decide to plow back 40% of the earnings at the firm's current return on equity of 20%. What is the value of the stock before and after the plowback decision?

No Growth

$$P_0 = \frac{5}{.12} = \$41.67$$

With Growth

$$g = .20 \times .40 = .08$$

$$P_0 = \frac{3}{.12 - .08} = \$75.00$$

Share's Expected Return

- Expected Return - The percentage yield that an investor forecasts from a specific investment over a set period of time. Sometimes called the holding period return (HPR).

$$\text{Expected return} = r = \frac{\text{Div}_1 + P_1 - P_0}{P_0}$$

$$= \frac{\text{Dividend income} + \text{price change}}{\text{investment}}$$

Share's Expected Return

what is the expected return assuming the stock price started the year at \$75 and is expected to be \$81 one year from now and expected to pay \$3 dividends?

$$\text{Expected return} = r = \frac{3 + 81 - 75}{75} = .12$$

Expected return = 12%

Share's Expected Return

The formula can be broken into two parts:

Dividend yield + Capital appreciation/gain

$$\text{Expected return} = r = \frac{\text{Div}_1}{P_0} + \frac{P_1 - P_0}{P_0}$$

Share's Expected Return

Example (continued) – Using the prior example, what is the expected dividend yield and capital gain?

$$\text{Expected return} = r = \frac{3}{75} + \frac{81 - 75}{75} = .04 + .08 = .12$$

Expected dividend yield = 4%

Expected capital gain = 8%