CHAPTER 8
Stocks and Their Valuation

- Features of common stock
- Determining common stock values
- Preferred stock

Facts about common stock

- Represents ownership
- Ownership implies control
- Stockholders elect directors
- Directors elect management
- Management's goal: Maximize the stock price

Types of stock market transactions

- Secondary market
- Primary market
- Initial public offering market ("going public")

Constant growth stock

- A stock whose dividends are expected to grow forever at a constant rate, g.

$$D_1 = D_0 (1+g)^1$$
$$D_2 = D_0 (1+g)^2$$
$$D_t = D_0 (1+g)^t$$

- If g is constant, the dividend growth formula converges to:

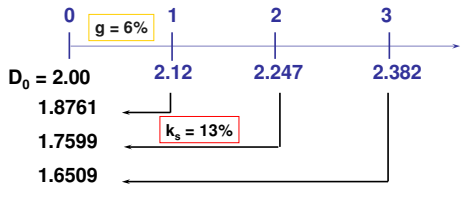
$$\hat{P}_0 = \frac{D_0(1+g)}{k_s - g} = \frac{D_1}{k_s - g}$$

If k_{RF} = 7%, k_M = 12%, and β = 1.2, what is the required rate of return on the firm's stock?

- Use the CAPM to calculate the required rate of return (k_s):

$$k_s = k_{RF} + (k_M - k_{RF})\beta$$
$$= 7\% + (12\% - 7\%)1.2$$
$$= 13\%$$

If D_0 = $2 and g is a constant 6%, find the expected dividend stream for the next 3 years, and their PVs.



What is the stock's market value?

- Using the constant growth model:

$$P_0 = \frac{D_1}{k_s - g} = \frac{\$2.12}{0.13 - 0.06}$$
$$= \frac{\$2.12}{0.07}$$
$$= \$30.29$$

8-7

What is the expected market price of the stock, one year from now?

- D_1 will have been paid out already. So, P_1 is the present value (as of year 1) of D_2, D_3, D_4, etc.

$$\hat{P}_1 = \frac{D_2}{k_s - g} = \frac{\$2.247}{0.13 - 0.06}$$
$$= \$32.10$$

- Could also find expected P_1 as:

$$\hat{P}_1 = P_0 (1.06) = \$32.10$$

8-8

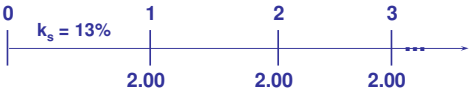
What is the expected dividend yield, capital gains yield, and total return during the first year?

- Dividend yield
  - = D_1 / P_0 = \$2.12 / \$30.29 = 7.0%
- Capital gains yield
  - = $(P_1 - P_0) / P_0$
  - = (\$32.10 - \$30.29) / \$30.29 = 6.0%
- Total return (k_s)
  - = Dividend Yield + Capital Gains Yield
  - = 7.0% + 6.0% = 13.0%

8-9

What would the expected price today be, if g = 0?

- The dividend stream would be a perpetuity.



$$\hat{P}_0 = \frac{PMT}{k} = \frac{\$2.00}{0.13} = \$15.38$$

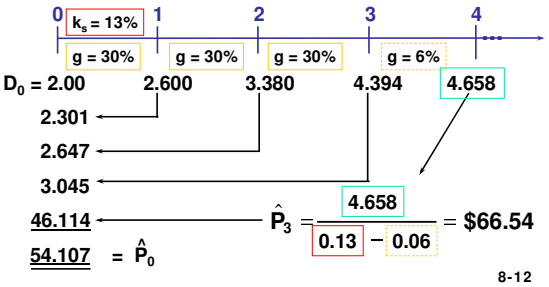
8-10

Supernormal growth: What if g = 30% for 3 years before achieving long-run growth of 6%?

- Can no longer use just the constant growth model to find stock value.
- However, the growth does become constant after 3 years.

8-11

Valuing common stock with nonconstant growth



8-12

Find expected dividend and capital gains yields during the first and fourth years.

- Dividend yield (first year)
  = $2.60 / $54.11 = 4.81%
- Capital gains yield (first year)
  = 13.00% - 4.81% = 8.19%
- During nonconstant growth, dividend yield and capital gains yield are not constant, and capital gains yield ≠ g.
- After t = 3, the stock has constant growth and dividend yield = 7%, while capital gains yield = 6%.

8-13

Preferred stock

- Hybrid security
- 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.

8-14

If preferred stock with an annual dividend of $5 sells for $50, what is the preferred stock's expected return?

$V_p = D / k_p$

$\$50 = \$5 / k_p$

$k_p = \$5 / \$50$

$= 0.10 = 10\%$

8-15