Chapter 9
Stocks and Their Valuation

COMMON STOCK VALUATION
1. Generally, the value of an asset is the present value of the benefits expected from the asset; what are the benefits expected from stock ownership?

\[ P_0 = D_1 (1 + r_s)^{-1} + D_2 (1 + r_s)^{-2} + D_3 (1 + r_s)^{-3} + \ldots = \sum_{t=1}^{\infty} D_t (1 + r_s)^{-t} \]

SOME SPECIAL CASES
1. Zero growth in dividends (for example, preferred stock)
   \[ D_1 = D_2 = D_3 = \ldots \]
   \[ \hat{P}_0 = \frac{D}{(1 + r_s)} + \frac{D}{(1 + r_s)^2} + \frac{D}{(1 + r_s)^3} + \ldots \]
   \[ \hat{P}_0 = \frac{D}{r_s} \]
   Calculate the value of a preferred stock issue that pays an annual dividend of $5 and has a required rate of return of 10%.

2. Constant growth
   \[ \hat{P}_0 = D_1 (1 + r_s)^{-1} + D_2 (1 + r_s)^{-2} + D_3 (1 + r_s)^{-3} + \ldots \]
   \[ \hat{P}_0 = \frac{D_1}{r_s - g} \]
   Assume that the last dividend was $0.25, the company is growing at a constant rate of 6%, and that investors require 12% to invest in this company. What is the current price of a share of this stock?

What should the stock’s expected value be 1 year from now?

What if the company’s earnings and dividends are expected to decline by a constant 6% per year. Would anyone be willing to buy this stock? At what price?

COMPONENTS OF THE REQUIRED RETURN
Stockholders’ return consists of dividend yield and capital gains yield.
1. For a constant growth stock, total return, \( R \), can be written as
   \[ \hat{r}_s = \frac{D_1}{P_0} + g \]
   Refer to the constant growth stock above. What is the expected dividend yield, the capital gains yield, and total return for the first year?
NONCONSTANT GROWTH STOCK

\[ \hat{P}_0 = D_1 (1 + r_s)^{-1} + D_2 (1 + r_s)^{-2} + D_3 (1 + r_s)^{-3} + \ldots \]
\[ P_0 = D_1 (1 + r_s)^{-1} + D_2 (1 + r_s)^{-2} + \ldots + D_L (1 + r_s)^{-L} + P_L (1 + r_s)^{-L} \]

Where \( L \) is the period of the Last nonconstant growth dividend.

A generic constant growth pricing formula:

\[ \hat{P}_N = \frac{D_{N+1}}{r_s - g} \]

Assume the last dividend paid was $0.25 and investors require 12% to invest in this company’s stock. The company expects to experience dividend growth of 30% for the next 3 years, then to fall to a long-run constant growth rate of 6 percent. What would the stock’s value be under these conditions?

Assume that the company is expected to experience zero growth during the next 3 years and then achieve a constant growth rate of 6 percent in the fourth year and thereafter. What would be the stock’s value now?

SOME FEATURES OF COMMON AND PREFERRED STOCKS

1. Common stock features
   a. shareholder rights
   b. voting rights….cumulative voting versus straight voting, proxy voting
   c. classes of stock
   d. preemptive right
   e. dividends
2. Preferred stock features
   a. constant dividends
   b. dividend priority over common
   c. cumulative dividends
   d. par or stated value

VALUING THE ENTIRE CORPORATION

The value of a corporation (or division of a corporation) can be found by obtaining the present value of the firm’s (or division’s) free cash flows, here the discount rate is WACC, the cost of capital for the firm.

\[ FCF = [EBIT(1 - T) + Depreciation] - [Capital exp enditures + ΔNet working capital] \]
\[ V_{Company} = FCF_1 (1 + WACC)^{-1} + FCF_2 (1 + WACC)^{-2} + FCF_3 (1 + WACC)^{-3} + \ldots \]
\[ V_{Company in N} = \frac{FCF_{N+1}}{WACC - g} \]