Investing in Shares

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Valuation of Shares

Share (UK) or **Stocks** (US) are equity securities (claim of the owners of the firm). Each share entitles its holder to an equal share in the ownership of the firm. Usually, each share entitled to the same amount of profits and its entitled to one vote on matters of corporate governance.

Common shares represent a residual claim on the assets of a firm (assets that are left over after meeting all of the firm´s other financial obligations).

Valuation of Shares

Value of a share = Present Value of its expected future cash flows.

To value a share is needed to:
    i) Estimate future cash flows:
        1. Size (how much) and
        2. Timing (when)

    ii) Discount future cash flows at an appropriate discount rate (interest rate):
        The discount rate should be related with the share risk.

Valuation of Share

Case 1: The dividends will remain constant forever:

$$\text{Div}_1 = \text{Div}_2 = \text{Div}_3 = \text{ Constant DIV}$$

Since future cash flows are constant, the value of a zero growth stock is the present value of a perpetuity:

$$P_0 = \frac{\text{Div}_1}{(1+r)^1} + \frac{\text{Div}_2}{(1+r)^2} + \frac{\text{Div}_3}{(1+r)^3} + \dots$$

$$P_0 = \frac{\text{Div}}{r}$$

Valuation of Share

Case 2: Constant Growth :

$$Div_1 = Div_0(1+g)$$

$$Div_2 = Div_1(1+g) = Div_0(1+g)^2$$

$$Div_3 = Div_2(1+g) = Div_0(1+g)^3$$

The future cash flows grow at a constant rate forever, because of thar the value of a constant growth stock is the present value of a growing perpetuity:

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

Valuation of Share

Case 3: Variable Growth :

We assume that dividends will grow at variable in the predictable future and then will grow at a constant rate thereafter. Then to value a Differential Growth Stock, we need to:

1. Estimate future dividends in the foreseeable future (usually 5 to 10 years).
2. Estimate the future stock price when the stock becomes a Constant Growth Stock (case 2).
3. Compute the total present value of the estimated future dividends and future stock price at the appropriate discount rate.

Valuation of Share

Case 3: Variable Growth :

$$P_0 = Div_1/(1+r) + Div_2/(1+r)^2 + Div_3/(1+r)^3 + \ldots$$

$$\ldots + Div_n/(1+r)^n + P_n/(1+r)^n$$

Assuming that dividends will grow at a constant rate after n (the predictable future):

$$P_n = Div_{n+1}/(r-g)$$

Valuation of Share

Example: Assume that we are going to have the share for one year, then:

$$P_0 = (Div_1 + P_1)/(1+r)^1$$

Rearranging:

$$(1+r) = (Div_1 + P_1)/P_0$$

$$r = Div_1/P_0 + (P_1 - P_0)/P_0$$

(dividend yield) + (capital gain)

Valuation of Share

Example:

The Share ABC is expected to pay a dividend of 2€ per share a year from now, and its dividends are expected to grow by 6% per year thereafter. If its price is now 20€ per share, what must be the discount rate?

R: 16%

Valuation of Share

Example:

The Share ABCD is expected earnings of 10€ per share, an earnings retention rate of 75%, an expected rate of return on future investments of 18% per year, and a discount rate of 15% per year. Compute an estimate of the ABCD share price.

R: $P_0 = 166,67€$