

การบ้าน บทที่ 9

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ข้อ 9-18 Constant growth stock valuation

Your broker offers to sell you some shares of Bahnsen & Co. common stock that paid a dividend of \$2 yesterday. You expect the dividend to grow at the rate of 5 percent per year for the next 3 years, and, if you buy the stock, you plan to hold it for 3 years and then sell it.

a. Find the expected dividend for each of the next 3 years; that is, calculate D_1 , D_2 and D_3 . Note that $D_0 = \$2.00$.

$$D_1 = D_0(1+g) = 2 \times (1+0.05) = \$2.1$$

$$D_2 = D_0(1+g)^2 = 2 \times (1+0.05)^2 = \$2.205$$

$$D_3 = D_0(1+g)^3 = 2 \times (1+0.05)^3 = \$2.3153$$

b. Given that the appropriate discount rate is 12 percent and that the first of these dividend payments will occur 1 year from now, find the present value of the dividend stream; that is, calculate the PV of D_1 , D_2 , and D_3 , and then sum these PVs.

$$PV \text{ of } D_1 = \frac{D_1}{k_s - g} = \frac{\$2.1}{0.12 - 0.05} = \frac{\$2.1}{0.07} = \$30$$

$$PV \text{ of } D_2 = \frac{D_2}{k_s - g} = \frac{\$2.205}{0.07} = \$31.5$$

$$PV \text{ of } D_3 = \frac{D_3}{k_s - g} = \frac{\$2.3153}{0.07} = \$33.0757$$

$$\therefore \text{sum these PVs} = \$30 + \$31.5 + \$33.0757 = \$94.5757$$