Dividend Discount Models

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Executive Knowledge

Dividend Discount Models

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One period: $V_0 = \frac{D_1 + P_1}{(1+r)^1}$

Two periods: $V_0 = \frac{D_1}{(1+r)^1} + \frac{D_2 + P_2}{(1+r)^2}$

Multi-periods: $V_0 = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \cdots + \frac{D_n + P_n}{(1+r)^n}$

V_0 current value
D_1 year one dividend
P_1 share price at end of year 1
r required rate of return

Example: It is expected that Leungbow Ltd will pay dividends of $3.00, $3.30 and $3.70 at the end of the next three years respectively. If an investor expects to hold Leungbow shares for three years then sell them for $48, **calculate** the current value, using an 8% discount rate.

Solution: $V_0 = \frac{3.00}{1.08} + \frac{3.30}{1.08^2} + \frac{3.70 + 48}{1.08^3} = \$46.65$

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Executive Knowledge

Equity valuation – dividend growth model

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If we adapt the DDM where the value is in a steady state and dividends grow at a constant rate g, we have the dividend growth model.

$$V_0 = \frac{D_0(1+g)}{r-g} = \frac{D_1}{r-g}$$

Example

Gemma Ltd's stock has an investor's required return of 7.8%. The recent $2.50 dividend is expected to grow at 5.0% indefinitely, and the current stock price is $104. **Calculate** the estimated value of Gemma stock.

Solution:

$$V_0 = \frac{D_0(1+g)}{r-g} = \frac{2.50 \times 1.05}{0.078-0.05} = \$93.75$$

Dividend Discount Models

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