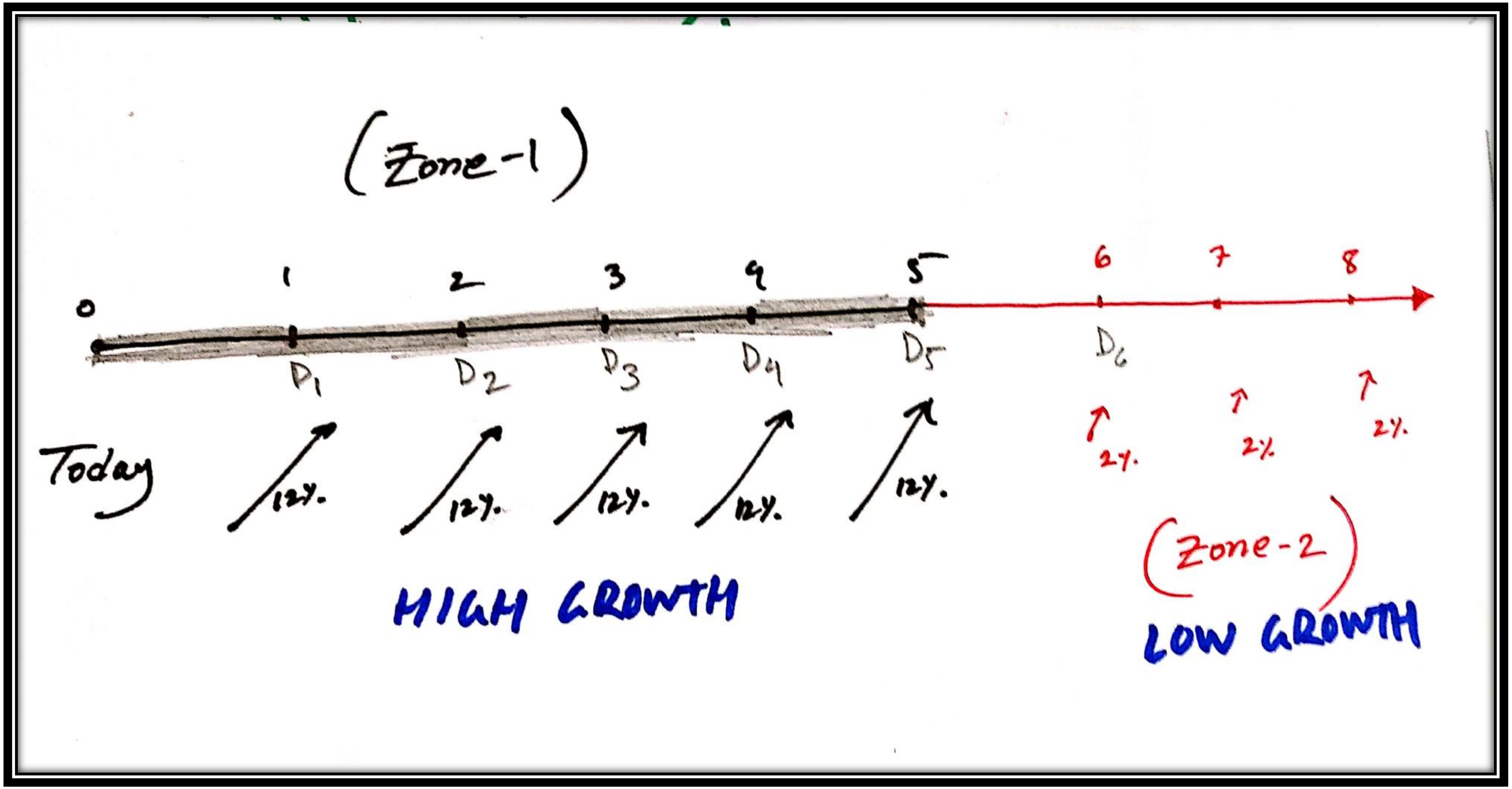
- **Gillette Corporation will pay an annual dividend of $0.65 one year from now. Analysts expect this dividend to grow at 12% per year thereafter until the fifth year. After then, growth will level off at 2% per year. According to the dividend-discount model, what is the value of a share of Gillette stock if the firm's equity cost of capital is 8%?**



The stock price TODAY = PV_{zone-1} + PV_{zone-2}

Dividend		*Future Value*	*Discount by Cost of Capital*	*Present Value*
D_1	\$0.65	\$0.65	$\frac{0.65}{(1+0.08)^1}$	\$0.602
D_2	D_1 * (1.12)	\$0.65 * 1.12 = \$0.728	$\frac{0.728}{(1+0.08)^2}$	\$0.625
D_3	D_2 * (1.12)	\$0.728 * 1.12 =\$0.815	$\frac{0.815}{(1+0.08)^3}$	\$0.647
D_4	D_3 * (1.12)	\$0.815 * 1.12 = \$0.913	$\frac{0.913}{(1+0.08)^4}$	\$0.671
D_5	D_4 * (1.12)	\$0.913 * 1.12 = \$1.0226	$\frac{1.0226}{(1+0.08)^5}$	\$0.696
PV_{zone-1}				**\$3.24**

FV_{zone-2} is essentially a perpetuity because the new growth rate is 2% is supposed to be "forever". How do we measure the value of perpetuity?

$$\frac{Cash\ Inflow}{k-g} = \frac{Cash\ Inflow}{Cost\ of\ Capital - Growth\ Rate}$$

We can modify this for our purpose as follows:

$$FV_{zone-2} = \frac{D_6}{k-g}$$

Solving for FV_{zone-2} should be easy now. Problem is, we don't know D_6 yet. Let's take care of that.

D_6 = D_5(1+g) = \$1.0226 * 1.02 = \$1.043

Therefore,

$$FV_{zone-2} = \frac{\$1.043}{0.08 - 0.02} = \$17.38$$

Now, we can convert the Future Value into Present Value:

$$PV_{zone-2} = \frac{FV_{zone-2}}{\mathbf{(1+0.08)^5}} = \frac{\$17.38}{1.08^5} = \mathbf{\$11.83}$$

Thus, the present value of the company = $PV_{zone-1} + PV_{zone-2} = \$3.24 + \$11.83 = \mathbf{\$15.07}$