ANUSHA FATIMA ALAM

CHE374 – Quiz 4 – Saturday 6th October 2024

It is year end, and RSG Investment Bank's stock is currently selling at $35.00 per share, just after paying out its annual dividend. The risk-free rate is 2.2% and the expected market return is 8%. The beta for RSG was recently quoted as 0.75. Historically, RSG has paid a dividend equal to 4% per share of the stock price, once a year at year end, so RSG paid its shareholders 4% of the pre-dividend stock price per share at year end this year, and is expected to pay out 4% of next year's price at the end of the coming year, and so on.

Question 1 1 pts

What is the expected stock price of RSG at year-end, 2 years from now, **before** paying out that year's dividend?

Question 2 1 pts

What is the expected stock price just **after** the dividend is paid out ?

Solutions

Risk Free Rate (RF)	2.2%
Market Rate (MR)	8%
Beta (B)	0.75
Current Stock Price w/o Dividend (CS)	$35.00

Dividend per share (DIV) = 4%

	Formula	Substitution	Answer	
CAPM	$E(R) = RF + B(MR-RF)$	$E(R) = 0.022 + 0.75(0.08-0.022)$	0.0655	A_1 ✓
Stock Price 1 year from now	$= CS*(1+A_1)$	$= 35(1+0.0655)$	$37.2925	A_2 ✓
Dividend a year end	$= A2*(DIV)$	$= 37.2925(0.04)$	$1.4917	A_3 ✓
Stock Price 1 year from now without dividend	$= A2*(1-DIV)$	$= 37.2925(1-0.04)$	$35.8008	A_4 ✓
Stock Price 2 years from now	$= A_4*(1+A_1)$	$= 35.8008(1+0.0655)$	$38.1457	A_5 ✓
Dividend at year end	$= A_5*(DIV)$	$= 38.1457(0.04)$	$1.52588	A_6
Stock Price 2 years from now without dividend	$= A5*(1-DIV)$	$= 38.1457(1-0.04)$	$36.61987	A_7
Stock Price 2.5 years from now	$= A7*(1+A_1)^{0.5}$	$= 36.61987(1+0.0655)^{0.5}$	$37.8001	A_8

Question 1) **$38.15** (4 sig figs)

Question 2) **$36.62** (4 Sig figs)