ECN134(SEC-A03): HW2

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1) Suppose the following information reflects a portfolio of stocks.

Company	Amount Invested	Return Last Year	Beta
Robb Industries	-$180	10%	0.8
Jamie Corp.	$540	11%	1.0
Jon Inc.	XXX	12%	1.2

(a) You know that the portfolio's total value is $500, what must be the value of XXX?
The value of XXX is $500 = (-180 + 540) + XXX \Rightarrow XXX=140$ dollars.

(b) What is the expected return on this portfolio? The expected return of the portfolio is calculated as $E(R_p)$=(.10)(−.36)+(1.08)(.11)+(.12)(0.28)=0.01164, where the weighted values w for each respective Company is calculated as $\frac{-180}{500} = -0.36$, $\frac{540}{500}$=1.08, $\frac{140}{500}$=0.28.

(c) Assuming CAPM holds, if the risk-free rate was 3% and the market return was 11% which stock in the portfolio had the best risk-adjusted performance last year?
Robb Industries' Return on investment is R_i=(0.8)(.11 − .03)+0.03=0.094
Jamie Crop.'s Return on investment is R_i=(1.0)(.11 − .03)+0.03=0.11
Jon Inc's Return on investment is R_i=(1.2)(.11 − .03)+0.03=0.126
So, stock of Jon Inc. had the best risk-adjusted performance last year.

2)

(a) Compu Crop. has committed to providing its shareholders with a 15% return on equity forever. They just began paying annual dividends. They've committed to paying 33.33% (1/3) of their net income as dividends for the next 2 years and then they will pay 66.67% (2/3) of their net income as dividends after that forever. Calculate the estimated growth rate for the company in the first three years and after that?
The estimated growth rate for the company in the first three years and after that is .021.

(b) Compu Corp. just paid a dividend of $1 and the market discount is 20%. What is the market price of a share of Compu Corp. now?
The market price of a share of Compu Corp. is P_0=$\frac{1}{.20}$=5 dollars.

(c) All else equal, if Compu Corp. paid dividends semi-annually instead of annually, would the value of Compu Corp be higher or lower? [No calculation, just provide a one sentence explanation of your answer.]

3)

(a) The Iron Bank of Braavos just paid a $10 dividend on preferred shares which is expected to grow annually by 5% per year. If the discount rate is 8%, what must the price of a preferred share be today?

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The price of a preferred share P_0 today is $P_0=\frac{D_1}{r}=\frac{10}{0.08}=125$ dollars.

(b) Next year a company is expected to pay \$2 as a dividend. Its return on equity is generally 3%, the discount rate 5%, and the company usually retains about 40% of its earnings. What is the price of a common share of stock?
Using the given information above, $P_0=\frac{D_0}{0.05-((0.40)(0.03))}=52.63$ dollars.

(c) Med Sci Inc. just paid \$0.50 per common share dividend which is expected to grow by 10what must the price of a common share of stock be today?
The price of a common share of stock P_0 today is $P_0=\frac{0.50}{.14-.10}=12.5$ dollars.

(d) An analyst reports that SSH Inc. is expected to have a 8% return next quarter. If the current t-bill rate is 2
From the given information, The calculated risk premium, based on a historical approach, is $R_m-R_f=0.08-0.02=0.06$.

(e) Suppose there is 50% chance of a 1% gain on a stock and a 50% chance of a 1% loss on a stock. What is the expected standard deviation of this stocks return?
The standard deviation σ is $\sigma=\sqrt{(0.50)(0.01)^2+(0.50)(-.01)^2}=0.01$.

(f) If the market risk premium is 5%, the risk-free rate is 3%, and the estimated expected return on a stock is 7%, what must be the estimated beta for that stock?
We calculate the estimated beta β for a stock, from the given information above. $R_i=\beta(R_m-R_f)+R_f \Rightarrow 0.07=\beta(0.05-0.03)+0.03=2$. So, $\beta=2$