Assignment 15

Using the CAPM

Group:

Section:

1. Merck (MRK) just finished paying an annual dividend of $1.80. You look up their beta and it equals 0.39, implying it's much less risky than the market portfolio. The current risk-free rate equals 2.35%. Assume a market risk premium of 5%. Merck's current stock price is $58.81. Assuming investors expect Merck to grow at a constant rate in perpetuity, what is that growth rate expectation? (Hint: it's the one that causes the present value of expected future cash flows to equal $58.81)

2. Now assume that you expect Merck to grow its dividends at 3% in perpetuity. If you are really quite certain that you got it right (and the stock market got it wrong), what should you do? In other words, do you perceive Merck's current stock price to indicate that the market has over- or under-valued the company?

3. Suppose the market risk premium is 5% and also that the standard deviation of returns on the market portfolio is 0.19. Further assume that the correlation between the returns on ABX (Barrick Gold) stock and returns on the market portfolio is -0.10, while the standard deviation of returns on ABX stock is 0.26. Finally, assume that the risk-free rate is 4%. Under the CAPM, what is the expected return on ABX stock?

4. Using the information below, what is the required return on Stock X (under the CAPM). Is it under- or over-valued?

	Expected Return	Standard Deviation	Covariance with S&P 500
Stock X	0.19	0.32	0.048
S&P 500	0.085	1.80	0.0324
T-Bills	0.04		0

5. Estimate beta for the portfolio below.

Ticker	Value	Beta	Weight	Weighted-Beta
GM	$1.90	0.80		
CSCO	$2.50	1.80		
DE	$2.00	1.00		
WY	$1.10	0.80		
PG	$1.50	1.2		
Portfolio				