

Quiz A for 1:00 Class: 2/25/13

Name Key

Note: There are no points for solving this problem. All points are for setting up the equations, plugging in the relevant numbers, and stating what you want to solve for (if you are not simply solving the equation).

Given the following information calculate the beta of a portfolio with \$125,000 invested in Apple (AAPL) which has a beta of 0.75 and \$75,000 invested in GlaxoSmithKline (GSK). Assume the risk-free rate is 2% and that the market risk-premium equals 5%.

Year	Return on:		
	S&P500	AAPL	GSK
2012	17%	1%	8%
2011	4%	35%	29%
2010	22%	77%	-2%
2009	33%	113%	16%

Wall Street Journal Questions are on the back of this page.

$$+3 \left( \beta_p = \left( \frac{125,000}{125,000 + 75,000} \right) (0.75) + \left( \frac{75,000}{125,000 + 75,000} \right) \beta_{GSK} \right) \quad (9)$$

$$+3 \left( \beta_{GSK} = \frac{COV_{GSK, S\&P500}}{VAR_{S\&P500}} \right) \quad (3)$$

$$+3 \left( COV_{GSK, S\&P500} = \frac{1}{3} \left( (8 - 6)(17 - 5) + (29 - 6)(4 - 5) + (-2 - 6)(22 - 5) + (16 - 6)(33 - 5) \right) \right) \quad (13)$$

$$+2 \left( 6 = \bar{r}_{GSK} = \frac{1}{4} (8 + 29 - 2 + 16) \right) \quad (8)$$

$$+2 \left( 5 = \bar{r}_{S\&P500} = \frac{1}{4} (17 + 4 + 22 + 33) \right) \quad (8)$$

$$+3 \left( VAR_{S\&P500} = \frac{1}{3} \left( (17 - 5)^2 + (4 - 5)^2 + (22 - 5)^2 + (33 - 5)^2 \right) \right) \quad (9)$$