

Quiz B for 4:00 Class: 10/03/12

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 returns over the past four years for J.P. Morgan Chase (JPM), Tyco(TYC), and the Standard & Poor's 500 (S&P500), calculate the beta of and required return on J.P. Morgan Chase. Assume the market risk premium is 6% and that the risk-free interest rate is 1%.

Year	Return on:		
	JPM	TYC	S&P500
2012	+ 21%	- 37%	+ 15%
2011	- 6%	+ 21%	+ 6%
2010	- 9%	+ 17%	+ 14%
2009	+ 3%	+ 37%	+ 7%

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

$$+6 \left(\beta_{JPM} = \frac{\text{cov}(R_{JPM}, R_{S\&P})}{\text{var}(R_{S\&P})} \right) \textcircled{6}$$

$$+6 \left(\text{cov}(R_{JPM}, R_{S\&P}) = \frac{1}{3} \left((21 - \bar{R}_{JPM})(15 - \bar{R}_{S\&P}) + (-6 - \bar{R}_{JPM})(6 - \bar{R}_{S\&P}) \right. \right. \\ \left. \left. + (-9 - \bar{R}_{JPM})(14 - \bar{R}_{S\&P}) + (3 - \bar{R}_{JPM})(7 - \bar{R}_{S\&P}) \right) \right) \textcircled{24}$$

$$+3 \left(\bar{R}_{JPM} = \frac{1}{4} (21 + (-6) + (-9) + 3) \right) \textcircled{9}$$

$$+3 \left(\bar{R}_{S\&P} = \frac{1}{4} (15 + 6 + 14 + 7) \right) \textcircled{9}$$

$$+6 \left(\text{var}(R_{S\&P}) = \frac{1}{3} \left((15 - \bar{R}_{S\&P})^2 + (6 - \bar{R}_{S\&P})^2 + (14 - \bar{R}_{S\&P})^2 + (7 - \bar{R}_{S\&P})^2 \right) \right) \textcircled{12}$$

$$+6 \left(r_{JPM} = 1 + \beta_{JPM} (6) \right) \textcircled{15}$$