

Quiz B for 2:30 Class: 9/24/12

Name Key

Use the following information to calculate the standard deviation of returns on Ford (F) and Prudential Financial (PRU), and the covariance between the returns on Ford and Prudential for the past four years. If the numbers you have calculated are representative for these firms, what would you expect the standard deviation of returns to be on a portfolio where you invest 80% of your funds in Ford and 20% of your funds in Prudential?

Year	Return on:	
	F	PRU
2012	+6%	+28%
2011	-21%	-19%
2010	+84%	+13%
2009	+38%	-31%

Note: You don't have to solve anything, just set everything up.

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

$$+4 \left( SD_F = \sqrt{\frac{1}{3} \left( (6 - \bar{R}_F)^2 + (-21 - \bar{R}_F)^2 + (84 - \bar{R}_F)^2 + (38 - \bar{R}_F)^2 \right)} \right) \quad (12)$$

$$+4 \left( \bar{R}_F = \frac{1}{4} (6 - 21 + 84 + 38) \right) \quad (12)$$

$$+4 \left( SD_{PRU} = \sqrt{\frac{1}{3} \left( (28 - \bar{R}_{PRU})^2 + (-19 - \bar{R}_{PRU})^2 + (13 - \bar{R}_{PRU})^2 + (-31 - \bar{R}_{PRU})^2 \right)} \right) \quad (12)$$

$$+4 \left( \bar{R}_{PRU} = \frac{1}{4} (28 - 19 + 13 - 31) \right) \quad (12)$$

$$+5 \left( COV = \frac{1}{3} \left( (6 - \bar{R}_F)(28 - \bar{R}_{PRU}) + (-21 - \bar{R}_F)(-19 - \bar{R}_{PRU}) + (84 - \bar{R}_F)(13 - \bar{R}_{PRU}) + (38 - \bar{R}_F)(-31 - \bar{R}_{PRU}) \right) \right) \quad (20)$$

$$+5 \left( SD_P = \sqrt{(0.8)^2 SD_F^2 + (0.2)^2 SD_{PRU}^2 + 2(0.8)(0.2)COV} \right) \quad (2)$$