

Tutorial 3

#1:

You've observed the following returns on Crash-n-Burn Computer's stock over the past five years: 7 percent, -12 percent, 11 percent, 38 percent, and 14 percent.

- What was the arithmetic average return on Crash-n-Burn's stock over this five-year period?
- What was the variance of Crash-n-Burn's return over his period? The standard deviation?

#2:

For the problem above, suppose the average inflation rate over this period was 3.5 percent and the average rate T-bill rate over the period was 4.2 percent.

- What was the average real return on Crash-n-Burn's stock?
- What was the average nominal risk premium on Crash-n-Burn's stock?

#3:

Given the information in Problem just above, what was the average real risk-free rate over this time period? What was the average real risk premium?

#4:

A stock has had the following year-end prices and dividends:

Year	Price	Dividends
1	\$60.18	
2	73.66	\$0.60
3	94.18	0.64
4	89.35	0.72
5	78.49	0.80
6	95.05	1.20

What are the arithmetic and geometric returns for the stock?

#5:

Consider the following information on three stocks:

State of Economy	Probability of State of Economy	Rate of Return if State Occurs		
		Stock A	Stock B	Stock C
Boom	0.35	0.24	0.36	0.55
Normal	0.50	0.17	0.13	0.09
Bust	0.15	0.00	-0.28	-0.45

- If your portfolio is invested 40 percent each in A and B and 20 percent in C, what is the portfolio expected return? The variance? The standard deviation?
- If the expected T-bill rate is 3.80 percent, what is the expected risk premium on the portfolio?

#6:

Consider the following information on 2 stocks:

Year	Stock A return	Stock B return
1	0.12	0.07
2	0.09	0.11
3	0.15	-0.02
4	0.05	0.04

- What is the arithmetic average return for Stocks A and B?
- What is the estimated standard deviation of returns for Stocks A and B?
- What is the covariance of returns for Stock A and Stock B?
- What is the correlation coefficient of returns for Stock A and Stock B?