

Introduction to Finance - II
Quiz 2 *February 4, 2020*

Read the questions carefully. Don't make them harder than they are! Answer succinctly and precisely. **Show all of your work.**

Suppose that we pull the following monthly return data from a source such as WRDS for 2 stocks, ITT and NOC:

Date	Returns	
	ITT	NOC
20180228	-0.01	0.02
20180331	0.03	0.00
20180430	0.00	-0.01

1. **(30 points)** What is the correlation between the monthly returns on ITT and NOC?

2. Statistical analysis of 100 monthly returns shows the following statistics for the monthly returns of MMM and LHX:

	MMM	LHX
Expected Return	0.007	0.014
Standard Deviation	0.03	0.18

The correlation between the monthly returns on these stocks is 0.25. Form a portfolio with 70% invested in MMM and 30% in LHX.

(a) **(10 points)** What is the expected return on this portfolio?

(b) **(20 points)** What is the standard deviation of this portfolio?

(c) Suppose that the correlation between the monthly returns of MMM and LHX were -0.40 instead of 0.25.
i. **(10 points)** How would this affect this portfolio's expected return?

ii. **(20 points)** How would this affect this portfolio's standard deviation?

iii. **(10 points)** *Explain* why this change in the correlation between the 2 stocks' returns from 0.25 to -0.40 affects the portfolio's mean return and return standard deviation as per your answers to the preceding questions.