

Economics 487

Homework #1

Return Calculations

Due Tuesday 9/8

The main purpose of this homework assignment is to give you a relatively easy introduction to using Microsoft Excel. Excel should be available on campus computers. If you are not at all familiar with Excel or spreadsheets in general, it may be useful to pick up an inexpensive guidebook like “Excel for Dummies.” Also, there are many useful tips on using Excel in economics at the following website:

<http://cameron.econ.ucdavis.edu/excel/excel.html>

For this assignment, you will download an Excel data file (discussed below), make some calculations, and answer a series of questions. Your answers should be typed.

The data file contains monthly price data for Microsoft stock. To download the Excel file “hw1.xls”, right-click the mouse on the link on the class website and select “save file as...”. Save the file to a local drive. Open the file in Excel and do the following exercises.

A. Excel Exercises: *(10 points)*

1. Make a time plot of the monthly price data over the sample period of January 1987 through December 1996. Paste your plot in a word processor file and type some general comments on what you see below the plot (e.g., “the price increases exponentially over time”).
2. Make a time plot of the natural logarithm of monthly price data over the same sample period. Again, paste and comment. Compare with the plot of the raw data. Why is it generally more informative to look at a plot of the log of prices than a plot of the raw data?
3. Using the monthly price data over the same sample period, compute the “simple” (no compounding) monthly returns (note: until recently, and during the period covered in the data file, Microsoft did not pay dividends). Make a time plot of the monthly returns. (Note: you will not have a return for Jan. 1987. The first return will be for Feb. 1987.) Paste and comment, giving the mathematical formula (not the Excel function) used to calculate the simple returns.
4. Using the simple monthly returns, compute simple annual returns for the each month in the sample period (starting in January 1988). (Hint: do not calculate the “annualized” return—i.e., what you would earn if you obtained the same monthly return for a whole year—but instead calculate what the realized return was for the past twelve months.) Make a time plot of the annual returns. Paste and comment, giving the mathematical formula used to calculate annual returns.

5. Using the monthly price data over the January 1987 through December 1996 sample period, compute the continuously compounded monthly returns. Make a time plot. Paste and comment, giving the mathematical formula used to calculate continuously compounded returns. Compare the continuously compounded returns with the simple monthly returns. Why are the continuously compounded returns always less than the simple returns?
6. Using the continuously compounded monthly returns, compute continuously compounded annual returns for each month in the sample period. Make a time plot. Paste and comment, giving the mathematical formula used to calculate annual continuously compounded returns.

B. Reading Assignment: (10 points)

Read through Part One “Stocks and Their Value” of A Random Walk Down Wall Street. As you read, take notes of what each chapter is about. Write up an executive summary of each chapter. An executive summary should cover the main points raised by the author without assuming that your reader has read the book. You can also comment on how effectively you think points are presented. The total write-up should be between 2-4 pages (typed and double-spaced).

If, having read Part One and having taken notes, you have any questions regarding how to write the executive summary, please come and see me in office hours. The purpose of this part of the assignment is to ensure that you have read and comprehended the material in the book. If you have done so, this component should be a good way to get “easy points” on the overall homework assignment. Note: from the standpoint of evaluation, it is impossible to distinguish between unclear writing and unclear thought. Thus, writing clarity and style enter into the grading scheme for the reading assignment.

Grading Scheme:

9-10 points	Excellent (well-written) summary that covers main points
7-8 points	Good summary (some writing difficulties) that covers most points
5-6 points	Major writing difficulties and incomplete summary
0-4 points	Summary suggests that text was not read closely and/or comprehended