

PROJECT GUIDELINES

Each group of students (of no more than 4) will collect daily data for at least five years on the following instruments: at least six stocks, two corporate bonds of your choice, and two commodities of your choice. Use assets traded on US exchanges and markets. You are free to use mutual funds or Exchange-Traded Funds instead of individual assets. Also, collect the risk-free rate of your choice and the S&P 500 index. The project must be executed using EXCEL. You should perform, *at least*, the following tasks for the completion of the project along with the suitable explanations (both narrative/verbal and mathematical):

1. Decide on the allocation of your budget to each of the above instruments. Rationalize your choice based on your own investment philosophy. You should fill out a risk tolerance questionnaire and supply both the questionnaire and its suggested allocation (in the project's Appendix). In your discussion, please explain the choice of your investment vehicles and their significance in your portfolio. Label this as your investment policy statement (IPS).
2. Outline your investment objectives, constraints and strategies and discuss the relative importance of risk and return in your investment decision making.
3. Provide a preliminary discussion of the effects of the short investment horizon in your decision(s) and diversification strategy.
4. Compute the descriptive statistics for each instrument. Explain each metric you computed **from the perspective of the investor**. Provide graphs as well.
5. Compute additional metrics for the assets such as the correlation and covariance matrices, for the entire and two subperiods (of your own choosing), if needed. Interpret your findings. Also, compute each fund's alpha, beta, R-square. **Interpret your findings from the perspective of the investor.**
6. Calculate the return/risk of your risky portfolio. Explain each step in your analysis. You must use EXCEL's *mmult* functions for this part of the analysis.
7. Derive and graph the Capital Allocation Line. Graph the Efficient Frontier with your available investment instruments (assets) and superimpose your CAL. Discuss the various options you may have and finalize your optimal point.
8. Keep a track record of the macro- and microeconomic events that influenced your assets/portfolio and offer explanations for some of them, if you deem necessary. Your explanations should also be accompanied with some quantitative verification.

9. Measure and evaluate your overall portfolio's performance and compare it with the passive investment strategy. In this step, you should apply EXCEL's *Solver* to evaluate several possible outcomes (in terms of risk and return) and explain each outcome. In that endeavor, compute the various performance measures we have learned. Decide on the best outcome for you. Discuss.

10. Finally, perform a **critical evaluation** of the project. In other words, what did this project accomplish for you regarding the study and (this simple) application of investment theories and strategies? What would be the implications of constructing, managing and evaluating such a portfolio for your portfolio?

This essay should not exceed 5 typewritten pages, 1.5 line spacing. The report should also have all relevant software outputs (such as tables and figures) attached. This essay should contain between 1,000 to 1,400 words. In class, we will learn how to use EXCEL to carry out the above tasks. Students should ensure that:

- the structure of their report is orderly and logical
- equations are correctly expressed
- outputs are readable
- and that their finished project is free from spelling or other typographical or grammatical errors

Grading rubric

This project entails 70% of your overall grade. Each question carries following number of points:

| | |
|------------|----|
| Que. 1 | 10 |
| Que. 2 | 10 |
| Que. 3 | 5 |
| Que. 4 | 5 |
| Que. 5 | 10 |
| Que. 6 | 15 |
| Que. 7 | 10 |
| Que. 8 | 10 |
| Que. 9 | 15 |
| Que. 10 | 10 |
| ----- | |
| 100 points | |

Miscellaneous

Turnitin. Each student must submit electronically the written project to Turnitin prior to the submission to the instructor. Your originality rate cannot exceed the 15% similarity rate.

Plagiarism is an offense. Please refer to your Student Handbook for information regarding the rules on this matter. It is each student's responsibility to make him/herself aware and adhere to the rules. More details in class.

Submission Deadline: Assignments should be submitted no later than the last day of lectures (TBA).